



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 8**

**999 18th STREET - SUITE 300  
DENVER, COLORADO 80202-2466  
<http://www.epa.gov/region08>**

  
1242380 - R8 SDMS

Ref: 8TMS-G

OCT 02 2006

Nancy J. Severson, Manager  
City & County of Denver  
201 W. Colfax Ave.  
Denver, CO 80202

Re: VB/I70 Superfund Site  
V 978105-01

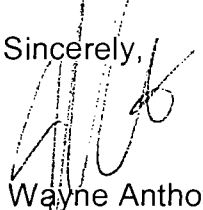
Dear Ms. Severson:

Enclosed is Assistance Amendment No. 2 which increases your VB/I70 Superfund Site Assistance Agreement by \$337,835. This brings the total Federal funds awarded to \$1,457,487.

Please sign and date all copies, retain the recipient copy for your files and return the remaining EPA copy to the Grants, Audit and Procurement Program Office (8TMS-G).

If you have any questions regarding the administrative requirements, please contact Olive Hofstader at (303) 312-6467 or via email at [hofstader.olive@epa.gov](mailto:hofstader.olive@epa.gov). If you have any questions regarding the technical requirements, contact Victor Ketellapper at (303) 312-6578 or via email at [ketellapper.victor@epa.gov](mailto:ketellapper.victor@epa.gov).

Sincerely,



Wayne Anthofer, Director  
Grants, Audit & Procurement  
Program Office

Enclosures

cc: Celia VanDerLoop, City & County Denver  
Karren Johnson, 8EPR-SR  
Victor Ketellapper, 8EPR-SR  
Linda Armer, 8EPR-PS  
Peter Puglisi, LVFC



Printed on Recycled Paper.



# U.S. ENVIRONMENTAL PROTECTION AGENCY

## Cooperative Agreement

### ASSISTANCE ID NO.

PRG	DOC ID	AMEND#
V	97810501	- 2

### DATE OF AWARD

**SEP 25 2006**

### MAILING DATE

**OCT 02 2006**

TYPE OF ACTION  
Augmentation: Increase

PAYMENT METHOD:  
ACH

ACH#  
80069

RECIPIENT TYPE:  
County

Send Payment Request to:  
Las Vegas Financial Center-  
LVFC

### RECIPIENT:

City & County of Denver  
201 West Colfax Ave  
Denver, CO 80202  
EIN: 84-6000580

### PAYEE:

City and County of Denver  
201 West Colfax Ave  
Denver, CO 80202

### PROJECT MANAGER

Ms. Celia VanDerLoop  
201 West Colfax Ave  
Denver, CO 80202  
E-Mail: CeliaVanDerLoop@ci.denver.co.us  
Phone: (720) 865-5458

### EPA PROJECT OFFICER

Victor Ketellapper  
999 18th Street, Suite 300, EPR-SR  
Denver, CO 80202-2466  
E-Mail: Ketellapper.Victor@epa.gov  
Phone: 303-312-6578

### EPA GRANT SPECIALIST

Olive Hofstader  
Grants, Audit, Procurement Office, TMS-G  
E-Mail: hofstader.olive@epa.gov  
Phone: 303-312-6467

### PROJECT TITLE AND EXPLANATION OF CHANGES

VB/170 Superfund Site Remedial Action - Community Health Plan

Increase of Funds (Supplemental); Increase federal funds by \$337,835; bringing total federal funds to \$1,457,487.

### BUDGET PERIOD

07/30/2004 - 12/31/2007

### PROJECT PERIOD

07/01/2004 - 12/31/2007

### TOTAL BUDGET PERIOD COST

\$1,457,487.00

### TOTAL PROJECT PERIOD COST

\$1,457,487.00

## NOTICE OF AWARD

Based on your application dated 07/18/2006, including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA), hereby awards \$337,835. EPA agrees to cost-share 100.00% of all approved budget period costs incurred, up to and not exceeding total federal funding of \$1,457,487. Such award may be terminated by EPA without further cause if the recipient fails to provide timely affirmation of the award by signing under the Affirmation of Award section and returning all pages of this agreement to the Grants Management Office listed below within 21 days after receipt, or any extension of time, as may be granted by EPA. This agreement is subject to applicable EPA statutory provisions. The applicable regulatory provisions are 40 CFR Chapter 1, Subchapter B, and all terms and conditions of this agreement and any attachments.

### ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)

#### ORGANIZATION / ADDRESS

Environmental Protection Agency, Region 8  
999 18th Street, Suite 300  
Denver, CO 80202-2466

### AWARD APPROVAL OFFICE

#### ORGANIZATION / ADDRESS

U.S. EPA, Region 8  
8EPR-SR  
999 18th Street, Suite 300  
Denver, CO 80202-2466

### THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY

#### SIGNATURE OF AWARD OFFICIAL

#### TYPED NAME AND TITLE

Wayne Anthofer, Director

#### DATE

**SEP 25 2006**

## AFFIRMATION OF AWARD

### BY AND ON BEHALF OF THE DESIGNATED RECIPIENT ORGANIZATION

#### SIGNATURE

#### TYPED NAME AND TITLE

Ms. Nancy J. Severson, Manager, Dept. of Env. Health

#### DATE

V - 97810501 - 2 Page 2

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$ 1,119,652	\$ 337,835	\$ 1,457,487
EPA In-Kind Amount	\$ 0	\$	\$ 0
Unexpended Prior Year Balance	\$ 0	\$	\$ 0
Other Federal Funds	\$ 0	\$	\$ 0
Recipient Contribution	\$ 0	\$	\$ 0
State Contribution	\$ 0	\$	\$ 0
Local Contribution	\$ 0	\$	\$ 0
Other Contribution	\$ 0	\$	\$ 0
Allowable Project Cost	\$ 1,119,652	\$ 337,835	\$ 1,457,487

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.802 - Superfund State Political Subdivision and Indian Tribe Site Specific Cooperative Agreements	CERCLA: Sec. 104(d)(1)	40 CFR PTS 31 & 35 SUBPT O

## Fiscal

[illegible]

## Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$434,644
2. Fringe Benefits	\$102,674
3. Travel	\$12,200
4. Equipment	\$0
5. Supplies	\$96,045
6. Contractual	\$766,713
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$1,412,276
10. Indirect Costs: % Base	\$45,211
11. Total (Share: Recipient 0.00 % Federal 100.00 %.)	\$1,457,487
12. Total Approved Assistance Amount	\$1,457,487
13. Program Income	\$0
14. Total EPA Amount Awarded This Action	\$337,835
15. Total EPA Amount Awarded To Date	\$1,457,487

## PREVIOUS CUMULATIVE TOTAL

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$293,488
2. Fringe Benefits	\$70,208
3. Travel	\$6,000
4. Equipment	\$0
5. Supplies	\$53,665
6. Contractual	\$674,703
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$1,098,064
10. Indirect Costs	\$21,588
11. Total (Share: Recipient % Federal %.)	\$1,119,652
12. Total Approved Assistance Amount	\$1,119,652
13. Program Income	\$0

## CURRENT AWARD

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$141,156
2. Fringe Benefits	\$32,466
3. Travel	\$6,200
4. Equipment	\$0
5. Supplies	\$42,380
6. Contractual	\$92,010
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$314,212
10. Indirect Costs	\$23,623
11. Total (Share: Recipient % Federal %.)	\$337,835
12. Total Approved Assistance Amount	\$337,835
13. Program Income	\$0



**Administrative Conditions**

All Administrative Conditions Remain the Same

**Programmatic Conditions**

All Programmatic Conditions Remain the Same



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 8**

**999 18th STREET - SUITE 300  
DENVER, COLORADO 80202-2486  
<http://www.epa.gov/region08>**

Ref: 8TMS-G

**AUG 15 2005**

Nancy J. Severson, Manager  
City & County of Denver  
201 W. Colfax Ave.  
Denver, CO 80202

Re: VB/I70 Superfund Site  
V 978105-01

Dear Ms. Severson:

Enclosed is Assistance Amendment No. 1 which increases your VB/I70 Superfund Site Assistance Agreement by \$676,652. This brings the total Federal funds awarded to \$1,119,652.

Please sign and date all copies, retain the recipient copy for your files and return the remaining EPA copy to the Grants, Audit and Procurement Program Office (8TMS-G).

If you have any questions regarding the administrative requirements, please contact Olive Hofstader at (303) 312-6467 or via email at [hofstader.olive@epa.gov](mailto:hofstader.olive@epa.gov). If you have any questions regarding the technical requirements, contact Victor Ketellapper at (303) 312-6578 or via email at [ketellapper.victor@epa.gov](mailto:ketellapper.victor@epa.gov).

Sincerely,

Wayne Anthofer, Director  
Grants, Audit & Procurement  
Program Office

Enclosures

cc: Celia VanDerLoop, City & County Denver  
Karren Johnson, EPR-SR  
Victor Ketellapper, EPR-SR  
Judy Lehmann, TMS-F  
Peter Puglisi, LVFC



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	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b>  <b>Cooperative Agreement</b>	ASSISTANCE ID NO.			DATE OF AWARD <b>AUG 08 2005</b>
		PRG	DOC ID	AMEND#	
		V - 97810501 - 1			
		TYPE OF ACTION Augmentation; Increase			MAILING DATE <b>AUG 15 2005</b>
PAYMENT METHOD: ACH			ACH# 80069		
RECIPIENT TYPE: County		Send Payment Request to: Las Vegas Financial Center- LVFC			
RECIPIENT: City & County of Denver 201 West Colfax Ave Denver, CO 80202 EIN: 84-6000580		PAYEE: City and County of Denver 201 West Colfax Ave Denver, CO 80202			
PROJECT MANAGER Ms. Celia VanDerLoop 201 West Colfax Ave Denver, CO 80202 E-Mail: CeliaVanDerLoop@ci.denver.co.us Phone: (720) 865-5458		EPA PROJECT OFFICER Victor Ketellapper 999 18th Street, Suite 300, EPR-SR Denver, CO 80202-2466 E-Mail: Ketellapper.Victor@epa.gov Phone: 303-312-6578		EPA GRANT SPECIALIST Olive Hofstader Grants, Audit, Procurement Office, TMS-G E-Mail: hofstader.olive@epa.gov Phono: 303-312-6467	
PROJECT TITLE AND EXPLANATION OF CHANGES VB/170 Superfund Site Remedial Action - Community Health Plan Increase of Funds (Supplemental); Increasing federal funds by \$676,652; bringing total federal funds to \$1,119,652.					
BUDGET PERIOD 07/30/2004 - 12/31/2006		PROJECT PERIOD 07/01/2004 - 12/31/2006		TOTAL BUDGET PERIOD COST \$1,119,652.00	
				TOTAL PROJECT PERIOD COST \$1,119,652.00	
<p><b>NOTE:</b> The Agreement must be completed in duplicate and the Original returned to the appropriate Grants Management Office listed below, within 3 calendar weeks after receipt or within any extension of time as may be granted by EPA. Receipt of a written refusal or failure to return the properly executed document within the prescribed time, may result in the withdrawal of the offer by the Agency. Any change to the Agreement by the Recipient subsequent to the document being signed by the EPA Award Official, which the Award Official determines to materially alter the Agreement, shall void the Agreement.</p>					
<b>OFFER AND ACCEPTANCE</b>					
<p>The United States, acting by and through the U.S. Environmental Protection Agency (EPA), hereby offers Assistance/Amendment to the <u>City &amp; County of Denver</u> for <u>100.00</u> % of all approved costs incurred up to and not exceeding <u>\$1,119,652</u> for the support of approved budget period effort described in application (including all application modifications) cited in the Project Title and Description above, signed <u>07/01/2004</u> included herein by reference.</p>					
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)			AWARD APPROVAL OFFICE		
ORGANIZATION / ADDRESS Environmental Protection Agency, Region 8 999 18th Street, Suite S00 Denver, CO 80202-2466			ORGANIZATION / ADDRESS U.S. EPA, Region 8 8EPR-SR 999 18th Street, Suite 300 Denver, CO 80202-2466		
<b>THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY</b>					
SIGNATURE OF AWARD OFFICIAL 			TYPED NAME AND TITLE Wayne Anthofer, Director		DATE <b>AUG 08 2005</b>
This agreement is subject to applicable U.S. Environmental Protection Agency statutory provisions and assistance regulations. In accepting this award or amendment and any payments made pursuant thereto, (1) the undersigned represents that he is duly authorized to act on behalf of the recipient organization, and (2) the recipient agrees (a) that the award is subject to the applicable provisions of 40 CFR Chapter 1, Subchapter B and of the provisions of this agreement (and all attachments), and (b) that acceptance of any payments constitutes an agreement by the payee that the amounts, if any found by EPA to have been overpaid will be refunded or credited in full to EPA.					
<b>BY AND ON BEHALF OF THE DESIGNATED RECIPIENT ORGANIZATION</b>					
SIGNATURE 			TYPED NAME AND TITLE Ms. Nancy J. Severson, Manager, Dept. of Env. Health		DATE

V - 97810501 - 1 Page 2

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$ 443,000	\$ 676,652	\$ 1,119,652
EPA In-Kind Amount	\$ 0	\$	\$ 0
Unexpended Prior Year Balance	\$ 0	\$	\$ 0
Other Federal Funds	\$ 0	\$	\$ 0
Recipient Contribution	\$ 0	\$	\$ 0
State Contribution	\$ 0	\$	\$ 0
Local Contribution	\$ 0	\$	\$ 0
Other Contribution	\$ 0	\$	\$ 0
Allowable Project Cost	\$ 443,000	\$ 676,652	\$ 1,119,652

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66 802 - Superfund State Political Subdivision and Indian Tribe Site Specific Cooperative Agreements	CERCLA: Sec. 104(d)(1)	40 CFR PTS 31 & 35 SUBPT O

## Fiscal

[illegible]

## Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$293,488
2. Fringe Benefits	\$70,208
3. Travel	\$6,000
4. Equipment	\$0
5. Supplies	\$53,665
6. Contractual	\$674,703
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$1,098,064
10. Indirect Costs: % Base	\$21,588
11. Total (Share: Recipient <u>0.00</u> % Federal <u>100.00</u> %.)	\$1,119,652
12. Total Approved Assistance Amount	\$1,119,652
13. Program Income	\$0

## Detailed Budget Page: 1

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$95,614
2. Fringe Benefits	\$26,772
3. Travel	\$0
4. Equipment	\$0
5. Supplies	\$15,000
6. Contractual	\$284,026
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$421,412
10. Indirect Costs	\$21,588
11. Total (Share: Recipient % Federal %.)	\$443,000
12. Total Approved Assistance Amount	\$443,000
13. Program Income	\$0

## current award

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$197,874
2. Fringe Benefits	\$43,436
3. Travel	\$6,000
4. Equipment	\$0
5. Supplies	\$38,665
6. Contractual	\$390,677
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$676,652
10. Indirect Costs	\$0
11. Total (Share: Recipient % Federal %.)	\$676,652
12. Total Approved Assistance Amount	\$0
13. Program Income	\$0

**Administrative Conditions**


All Administrative Conditions Remain the Same

**Programmatic Conditions**

All Programmatic Conditions Remain the Same

EPA COPY

V - 97810501 - 1 Page 1

	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b>  <b>Cooperative Agreement</b>		ASSISTANCE ID NO.		DATE OF AWARD <b>AUG 08 2005</b>	
			PRG	DOC ID		AMEND#
			V - 97810501 - 1			
			TYPE OF ACTION Augmentation: Increase		MAILING DATE <b>AUG 15 2005</b>	
PAYMENT METHOD: ACH		ACH# 80069				
RECIPIENT TYPE: County		Send Payment Request to: Las Vegas Financial Center- LVFC				
RECIPIENT: City & County of Denver 201 West Colfax Ave Denver, CO 80202 EIN: S4-60005S0		PAYEE: City and County of Denver 201 West Colfax Ave Denver, CO 80202				
PROJECT MANAGER Ms. Cella VanDerLoop 201 West Colfax Ave Denver, CO 80202 E-Mail: CellaVanDerLoop@cl.denver.co.us Phone: (720) 865-5458		EPA PROJECT OFFICER Victor Ketellapper 999 18th Street, Suite 300, EPR-SR Denver, CO 80202-2466 E-Mail: Ketellapper.Victor@epa.gov Phone: 303-312-6578		EPA GRANT SPECIALIST Olive Hofstader Grants, Audit, Procurement Office, TMS-G E-Mail: hofstader.olive@epa.gov Phone: 303-312-6467		
PROJECT TITLE AND EXPLANATION OF CHANGES VB/170 Superfund Site Remedial Action - Community Health Plan Increase of Funds (Supplemental); Increasing federal funds by \$676,652; bringing total federal funds to \$1,119,652.						
BUDGET PERIOD 07/30/2004 - 12/31/2006		PROJECT PERIOD 07/01/2004 - 12/31/2006		TOTAL BUDGET PERIOD COST \$1,119,652.00		
				TOTAL PROJECT PERIOD COST \$1,119,652.00		
NOTE: The Agreement must be completed in duplicate and the Original returned to the appropriate Grants Management Office listed below, within 3 calendar weeks after receipt or within any extension of time as may be granted by EPA. Receipt of a written refusal or failure to return the property executed document within the prescribed time, may result in the withdrawal of the offer by the Agency. Any change to the Agreement by the Recipient subsequent to the document being signed by the EPA Award Official, which the Award Official determines to materially alter the Agreement, shall void the Agreement.						
OFFER AND ACCEPTANCE						
The United States, acting by and through the U.S. Environmental Protection Agency (EPA), hereby offers Assistance/Amendment to the <u>City &amp; County of Denver</u> for <u>100.00</u> % of all approved costs incurred up to and not exceeding <u>\$1,119,652</u> for the support of approved budget period effort described in application (including all application modifications) cited in the Project Title and Description above, signed <u>07/01/2004</u> included herein by reference.						
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)			AWARD APPROVAL OFFICE			
ORGANIZATION / ADDRESS Environmental Protection Agency, Region 8 999 18th Street, Suite 300 Denver, CO 80202-2466			ORGANIZATION / ADDRESS U.S. EPA, Region 8 8EPR-SR 999 18th Street, Suite 300 Denver, CO 80202-2466			
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY						
SIGNATURE OF AWARD OFFICIAL		TYPED NAME AND TITLE Wayne Anthofer, Director		DATE <b>AUG 08 2005</b>		
This agreement is subject to applicable U.S. Environmental Protection Agency statutory provisions and assistance regulations. In accepting this award or amendment and any payments made pursuant thereto, (1) the undersigned represents that he is duly authorized to act on behalf of the recipient organization, and (2) the recipient agrees (a) that the award is subject to the applicable provisions of 40 CFR Chapter 1, Subchapter B and of the provisions of this agreement (and all attachments), and (b) that acceptance of any payments constitutes an agreement by the payee that the amounts, if any found by EPA to have been overpaid will be refunded or credited in full to EPA.						
BY AND ON BEHALF OF THE DESIGNATED RECIPIENT ORGANIZATION						
SIGNATURE		TYPED NAME AND TITLE Ms. Nancy J. Severson, Manager, Dept. of Env. Health		DATE		

04-784-4

## V - 97810501 - 1 Page 2

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$ 443,000	\$ 676,652	\$ 1,119,652
EPA In-Kind Amount	\$ 0	\$	\$ 0
Unexpended Prior Year Balance	\$ 0	\$	\$ 0
Other Federal Funds	\$ 0	\$	\$ 0
Recipient Contribution	\$ 0	\$	\$ 0
State Contribution	\$ 0	\$	\$ 0
Local Contribution	\$ 0	\$	\$ 0
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Allowable Project Cost	\$ 443,000	\$ 676,652	\$ 1,119,652

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.802 - Superfund State Political Subdivision and Indian Tribe Site Specific Cooperative Agreements	CERCLA: Sec. 104(d)(1)	40 CFR PTS 31 & 35 SUBPT O

## Fiscal

[illegible]



## Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
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10. Indirect Costs: % Base	\$21,588
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12. Total Approved Assistance Amount	\$1,119,652
13. Program Income	\$0

## Detailed Budget Page: 1

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## current award

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
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4. Equipment	\$0
5. Supplies	\$38,665
6. Contractual	\$390,677
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$676,652
10. Indirect Costs	\$0
11. Total (Share: Recipient % Federal %.)	\$676,652
12. Total Approved Assistance Amount	\$0
13. Program Income	\$0

**Administrative Conditions**

All Administrative Conditions Remain the Same

**Programmatic Conditions**

All Programmatic Conditions Remain the Same

CITY AND COUNTY OF DENVER

ATTEST:

By:

WAYNE E. VADEN, Clerk and  
Recorder, Ex-Officio Clerk of the  
City and County of Denver



WAYNE E. VADEN  
CLERK AND RECORDER

RECOMMENDED AND APPROVED:

By:

Manager of Environmental Health

APPROVED AS TO FORM:

COLE FINEGAN Attorney  
for the City and County of Denver

By:

Assistant City Attorney

REGISTERED AND COUNTERSIGNED:

By:

Auditor  
Contract Control No. GC43015(1)

"CITY"



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 300  
DENVER, COLORADO 80202-2466  
<http://www.epa.gov/region08>

Pef: 8TMS-G

**AUG 12 2004**

Nancy J. Severson, Manager  
City & County of Denver  
201 W. Colfax Ave  
Denver, CO 80202

Re: VB/I70 Superfund Site  
V 978105-01

Dear Ms. Severson:

We are pleased to inform you that we are approving your application for the VB/I70 Superfund Site in the amount of \$443,000. This award represents 100% of the amount requested in your FY application.

Please sign and date all copies of the enclosed award, retain the recipient copy for your files and return the EPA copy to the Grants, Audit and Procurement Program Office (8TMS-G).

If you have any questions regarding the administrative requirements, please contact Marshelle Howard at (303) 312-7833 or via email at [howard.marshelle@epa.gov](mailto:howard.marshelle@epa.gov). If you have any questions regarding the technical requirements, contact Victor Ketellapper at (303) 312-6578 or via email at [ketellapper.victor@epa.gov](mailto:ketellapper.victor@epa.gov).

As a reminder, grant payments for EPA Region 8 recipients has been transferred to the EPA Las Vegas Finance Center. Please refer to your notification letter for instructions or contact Bill Pumphrey at (702) 798-2493.

Sincerely,


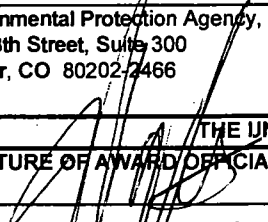
Wayne Anthofer, Director  
Grants, Audit & Procurement  
Program Office

Enclosures

cc: Celia VanDerLoop, City & County Denver  
Victor Ketellapper, 8EPR-SR  
Cheryl Pressley, 8TMS-F  
Bill Pumphrey, LVFC



Printed on Recycled Paper

	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b>  <b>Cooperative Agreement</b>		ASSISTANCE ID NO.		DATE OF AWARD 08/05/2004	
			PRG	DOC ID		AMEND#
			V - 97810501 - 0			
			TYPE OF ACTION New			MAILING DATE 08/12/2004
PAYMENT METHOD: ACH			ACH#			
RECIPIENT TYPE: County			Send Payment Request to: Las Vegas Financial Center- LVFC			
RECIPIENT:			PAYEE:			
City & County of Denver 201 West Colfax Ave Denver, CO 80202 EIN: 84-6000580			City and County of Denver 201 West Colfax Ave Denver, CO 80202			
PROJECT MANAGER		EPA PROJECT OFFICER		EPA GRANT SPECIALIST		
Ms. Celia VanDerLoop 201 West Colfax Ave Denver, CO 80202 E-Mail: CeliaVanDerLoop@ci.denver.co.us Phone: (720) 855-5458		Victor Ketellapper 999 18th Street, Suite 300 Denver, CO 80202-2466 E-Mail: Ketellapper.Victor@epa.gov Phone: 303-312-5578		Marshelle Howard REG, 8TMS-G E-Mail: Howard.Marshelle@epa.gov Phone: 303-312-7833		
PROJECT TITLE AND DESCRIPTION VB/170 Superfund Site Phase II - Community Health Plan Vasquez Blvd. Interstate 70 Superfund Site Phase II Community Health Program						
BUDGET PERIOD 07/30/2004 - 09/30/2006		PROJECT PERIOD 07/01/2004 - 09/30/2006		TOTAL BUDGET PERIOD COST \$443,000.00		
				TOTAL PROJECT PERIOD COST \$443,000.00		
<p><b>NOTE:</b> The Agreement must be completed in duplicate and the Original returned to the appropriate Grants Management Office listed below, within 3 calendar weeks after receipt or within any extension of time as may be granted by EPA. Receipt of a written refusal or failure to return the properly executed document within the prescribed time, may result in the withdrawal of the offer by the Agency. Any change to the Agreement by the Recipient subsequent to the document being signed by the EPA Award Official, which the Award Official determines to materially alter the Agreement, shall void the Agreement.</p>						
<b>OFFER AND ACCEPTANCE</b>						
<p>The United States, acting by and through the U.S. Environmental Protection Agency (EPA), hereby offers Assistance/Amendment to the <u>City &amp; County of Denver</u> for <u>100.00</u> % of all approved costs incurred up to and not exceeding <u>\$443,000</u> for the support of approved budget period effort described in application (including all application modifications) cited in the Project Title and Description above, signed <u>07/01/2004</u> included herein by reference.</p>						
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)			AWARD APPROVAL OFFICE			
ORGANIZATION / ADDRESS			ORGANIZATION / ADDRESS			
Environmental Protection Agency, Region 8 999 18th Street, Suite 300 Denver, CO 80202-2466			U.S. EPA, Region 8 8EPR-SR 999 18th Street, Suite 300 Denver, CO 80202-2466			
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY						
SIGNATURE OF AWARD OFFICIAL		TYPED NAME AND TITLE		DATE		
		Wayne Anthofer, Director		08/05/2004		
<p>This agreement is subject to applicable U.S. Environmental Protection Agency statutory provisions and assistance regulations. In accepting this award or amendment and any payments made pursuant thereto, (1) the undersigned represents that he is duly authorized to act on behalf of the recipient organization, and (2) the recipient agrees (a) that the award is subject to the applicable provisions of 40 CFR Chapter 1, Subchapter B and of the provisions of this agreement (and all attachments), and (b) that acceptance of any payments constitutes an agreement by the payee that the amounts, if any found by EPA to have been overpaid will be refunded or credited in full to EPA.</p>						
BY AND ON BEHALF OF THE DESIGNATED RECIPIENT ORGANIZATION						
SIGNATURE		TYPED NAME AND TITLE		DATE		
		Ms. Nancy J. Severson, Manager, Dept. of Env. Health				

## EPA Funding Information

V - 97810501 - 0 Page 2

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$	\$ 443,000	\$ 443,000
EPA In-Kind Amount	\$	\$	\$ 0
Unexpended Prior Year Balance	\$	\$	\$ 0
Other Federal Funds	\$	\$	\$ 0
Recipient Contribution	\$	\$	\$ 0
State Contribution	\$	\$	\$ 0
Local Contribution	\$	\$	\$ 0
Other Contribution	\$	\$	\$ 0
Allowable Project Cost	\$ 0	\$ 443,000	\$ 443,000

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.802 - Superfund State Political Subdivision and Indian Tribe Site Specific Cooperative Agreements	CERCLA: Sec. 104(d)(1)	40 CFR PTS 31 & 35 SUBPT O

Fiscal									
Site Name	DCN	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
VB/I70	LRA036	04	T	8ALOR	302DD2C	4185	089RRA01	C001	443,000
									443,000

## Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$95,614
2. Fringe Benefits	\$26,772
3. Travel	\$0
4. Equipment	\$0
5. Supplies	\$15,000
6. Contractual	\$284,026
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$421,412
10. Indirect Costs: % Base	\$21,588
11. Total (Share: Recipient 0.00 % Federal 100.00 %.)	\$443,000
12. Total Approved Assistance Amount	\$443,000
13. Program Income	\$0

## **Administrative Conditions**

1. The recipient will comply with the following: (1) all applicable provisions of 40 CFR Parts 29, 31, 34, and 35 (if applicable), OMB Circulars A-87, A-102, and A-133 and (2) any terms and conditions set forth in this assistance agreement or any assistance agreement.
  2. The Project Work Plan is the work plan for this award. Performance will be evaluated consistent with the Policy on Performance Based Assistance dated May 31, 1985.
  3. The recipient agrees to ensure that all requisitions for conference, meeting, convention, or training space funded in whole or in part with Federal funds comply with the Hotel and Motel Fire Safety Act of 1990.
  4. The recipient must submit an annual Financial Status Report within 90 days after the grant year, and must submit a final report within 90 days after the expiration or termination of grant support in accordance with 40 CFR Part 31.41(b).
  5. In accordance with OMB Circular A-21, A-87, or A-122, as appropriate, the recipient agrees that it will not use project funds, including the Federal and non-Federal share, to engage in lobbying the Federal Government or in litigation against the United States. The recipient also agrees to provide the information mandated by EPA's annual appropriations acts for fiscal year 2000, 2001 and fiscal year 2002 (PL 106-74, §426, PL 106-377, §424 and PL 107-73, §424 respectively) which require as follows: 'A chief executive officer of any entity receiving funds under this Act shall certify that none of these funds have been used to engage in the lobbying of the Federal Government or in litigation against the United States unless authorized under existing law.' The recipient may satisfy this certification requirement in any reasonable manner. The certification must be submitted to EPA after all grant funds have been expended.
  6. In accordance with EPA Order 1000.25 and Executive Order 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*, the recipient agrees to use recycled paper for all reports which are prepared as a part of this agreement and delivered to EPA. This requirement does not apply to reports prepared on forms supplied by EPA, or to Standard Forms, which are printed on recycled paper and are available through the General Services Administration. Please note that Section 901 of E.O. 13101, dated September 14, 1998, revoked E.O. 12873, *Federal Acquisition, Recycling, and Waste Prevention* in its entirety.
- Any State agency or agency of a political subdivision of a State which is using appropriated Federal funds shall comply with the requirements set forth in Section 6002 of the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6962). Regulations issued under RCRA Section 6002 apply to any acquisition of an item where the purchase price exceeds \$10,000 or where the quantity of such items acquired in the course of the preceding fiscal year was \$10,000 or more. RCRA Section 6002 requires that preference be given in procurement programs to the purchase of specific products containing recycled materials identified in guidelines developed by EPA. These guidelines are listed in 40 CFR 247.
7. Recipient shall fully comply with Subpart C of 40 CFR Part 32, entitled "Responsibilities of Participants Regarding Transactions." Recipient is responsible for ensuring that any lower tier covered transaction, as described in Subpart B of 40 CFR Part 32, entitled "Covered Transactions," includes a term or condition requiring compliance with Subpart C. Recipient is responsible for further requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions. Recipient acknowledges that failing to disclose the information required under 40 CFR 32.335 may result in the delay or negation of this assistance agreement, or pursuance of legal remedies, including suspension and debarment.

Recipient may access the Excluded Parties List System at <http://epls.amet.gov>.



8. In accordance with EPA's Program for Utilization of Small, Minority and Women's Business Enterprises in procurement under assistance programs, the recipient agrees to:

(a) Accept the applicable FY 2003 "fair share" goals negotiated with EPA by the Colorado Department of Public Health and Environment as follows:

	MBE	WBE
Construction	6.1%	6.6%
Supplies	6.1%	6.6%
Services	6.1%	6.6%
Equipment	6.1%	6.6%

If the recipient does not want to rely on the applicable State's MBE/WBE goals, the recipient agrees to submit proposed MBE/WBE goals based on availability of qualified minority and women-owned businesses to do work in the relevant market for construction, services, supplies and equipment. "Fair share" objectives must be submitted to Maurice Velasquez within 30 days of award and approved by EPA no later than 30 days thereafter.

- (b) Ensure to the fullest extent possible that at least the FY1999/2000 "fair share" objective of Federal funds for prime contractors or subcontracts for supplies, construction, equipment or services are made available to organizations owned or controlled by socially and economically disadvantaged individuals, women and historically black colleges and universities.
- (c) Include in bid documents "fair share" objectives of 1999/2000 fair share percentage [see a) above] and require all of its prime contractors to include in their bid documents for subcontracts the negotiated fair share percentages.
- (d) Follow the six affirmative steps stated in 40 CFR 30.44(b) 40 CFR 31.36(e), 35.3145(d), or 35.6580, as appropriate.
- (e) For assistance awards for continuing environmental programs and assistance awards with institutions of higher education, hospitals and other non-profit organizations, submit an EPA Form 5700-52A, "MBE/WBE Utilization Under Federal Grants, Cooperative Agreements and Interagency Agreements" to the EPA Award Official by October 30 of each year. Other program reports must be submitted to the award official within 30 days of the end of the Federal fiscal quarter (January 30, April, July 30 and October 30).
- (f) In the event race and/or gender neutral efforts prove to be inadequate to achieve a fair share objective for MBE/WBEs, the recipient agrees to notify EPA in advance of any race and/or gender conscious action it plans to take to more closely achieve the fair share objective.

### **Programmatic Conditions**

1. The recipient must submit an annual Performance/Progress Report within 90 days after the reporting period and a final report within 90 days after the expiration or termination of grant support in accordance with 40 CFR Part 31.40 (b) (2).
2. The recipient must submit a quarterly Performance/Progress Report within 30 days after the reporting period, and a final report within 90 days after the expiration or termination of grant support in accordance with 40 CFR Part 31.40(b)(1), and shall contain information in accordance with 40 CFR Part 31.41(b)(2).

3. Acceptable Quality Assurance documentation must be submitted to the EPA Project Officer within sixty days of this agreement. No work involving direct measures or data generation, environmental modeling, compilation of data from literature or electronic media, and data supporting the design, construction and operation of environmental technology shall be initiated under this project until the EPA Project Officer, in concert with the EPA Quality Assurance Manager, has approved the Quality Assurance documentation. (See 40 CFR 30.54 or 31.45, as appropriate.) Additional information on these requirements can be found at the EPA Office of Grants and Debarment Web site: <http://www.epa.gov/ogd/qa.htm>.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 300  
DENVER, COLORADO 80202-2466

<http://www.epa.gov/region08>

Ref: 8TMS-G

**AUG 1 2 2004**

Nancy J. Severson, Manager  
City & County of Denver  
201 W. Colfax Ave  
Denver, CO 80202

Re: VB/i70 Superfund Site  
V 978105-01

Dear Ms. Severson:

We are pleased to inform you that we are approving your application for the VB/i70 Superfund Site in the amount of \$443,000. This award represents 100% of the amount requested in your FY application.

Please sign and date all copies of the enclosed award, retain the recipient copy for your files and return the EPA copy to the Grants, Audit and Procurement Program Office (8TMS-G).

If you have any questions regarding the administrative requirements, please contact Marshelle Howard at (303) 312-7833 or via email at [howard.marshelle@epa.gov](mailto:howard.marshelle@epa.gov). If you have any questions regarding the technical requirements, contact Victor Ketellapper at (303) 312-6578 or via email at [ketellapper.victor@epa.gov](mailto:ketellapper.victor@epa.gov).

As a reminder, grant payments for EPA Region 8 recipients has been transferred to the EPA Las Vegas Finance Center. Please refer to your notification letter for instructions or contact Bill Pumphrey at (702) 798-2493.

Sincerely,


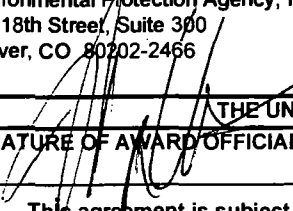
Wayne Anthofer, Director  
Grants, Audit & Procurement  
Program Office

Enclosures

cc: Celia VanDerLoop, City & County Denver  
Victor Ketellapper, 8EPR-SR  
Cheryl Pressley, 8TMS-F  
Bill Pumphrey, LVFC



Printed on Recycled Paper

	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b>  <b>Cooperative Agreement</b>	ASSISTANCE ID NO.			DATE OF AWARD <b>AUG 05 2004</b>
		PRG <b>V -</b>	DOC ID <b>97810501</b>	AMEND# <b>- 0</b>	
		TYPE OF ACTION New			MAILING DATE <b>AUG 12 2004</b>
		PAYMENT METHOD: ACH			ACH#
RECIPIENT TYPE: County		Send Payment Request to: Las Vegas Financial Center- LVFC			
RECIPIENT:  City & County of Denver 201 West Colfax Ave Denver, CO 80202 EIN: 84-6000580		PAYEE:  City and County of Denver 201 West Colfax Ave Denver, CO 80202			
PROJECT MANAGER Ms. Celia VanDerLoop 201 West Colfax Ave Denver, CO 80202 E-Mail: CeliaVanDerLoop@ci.denver.co.us Phone: (720) 865-5453		EPA PROJECT OFFICER Victor Ketellapper 999 18th Street, Suite 300 Denver, CO 80202-2466 E-Mail: Ketellapper.Victor@epa.gov Phone: 303-312-5578		EPA GRANT SPECIALIST Marshelle Howard REG, 8TMS-G E-Mail: Howard.Marshelle@epa.gov Phone: 303-312-7833	
PROJECT TITLE AND DESCRIPTION VB/i70 Superfund Site Phase II - Community Health Plan Vasquez Blvd. Interstate 70 Superfund Site Phase II Community Health Program					
BUDGET PERIOD 07/30/2004 - 09/30/2006		PROJECT PERIOD 07/01/2004 - 09/30/2006		TOTAL BUDGET PERIOD COST \$443,033.00	
				TOTAL PROJECT PERIOD COST \$443,033.00	
<p><b>NOTE:</b> The Agreement must be completed in duplicate and the Original returned to the appropriate Grants Management Office listed below, within 3 calendar weeks after receipt or within any extension of time as may be granted by EPA. Receipt of a written refusal or failure to return the properly executed document within the prescribed time, may result in the withdrawal of the offer by the Agency. Any change to the Agreement by the Recipient subsequent to the document being signed by the EPA Award Official, which the Award Official determines to materially alter the Agreement, shall void the Agreement.</p>					
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ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)			AWARD APPROVAL OFFICE		
ORGANIZATION / ADDRESS Environmental Protection Agency, Region 8 999 18th Street, Suite 300 Denver, CO 80202-2466			ORGANIZATION / ADDRESS U.S. EPA, Region 8 8EPR-SR 999 18th Street, Suite 300 Denver, CO 80202-2466		
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY					
SIGNATURE OF AWARD OFFICIAL 		TYPED NAME AND TITLE Wayne Arthofer, Director		DATE <b>AUG 05 2004</b>	
<p>This agreement is subject to applicable U.S. Environmental Protection Agency statutory provisions and assistance regulations. In accepting this award or amendment and any payments made pursuant thereto, (1) the undersigned represents that he is duly authorized to act on behalf of the recipient organization, and (2) the recipient agrees (a) that the award is subject to the applicable provisions of 40 CFR Chapter 1, Subchapter B and of the provisions of this agreement (and all attachments), and (b) that acceptance of any payments constitutes an agreement by the payee that the amounts, if any found by EPA to have been overpaid will be refunded or credited in full to EPA.</p>					
BY AND ON BEHALF OF THE DESIGNATED RECIPIENT ORGANIZATION					
SIGNATURE		TYPED NAME AND TITLE Ms. Nancy J. Severson, Manager, Dept. of Env. Health		DATE	

## V - 97810501 - 0 Page 2

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$	\$ 443,000	\$ 443,000
EPA In-Kind Amount	\$	\$	\$ 0
Unexpended Prior Year Balance	\$	\$	\$ 0
Other Federal Funds	\$	\$	\$ 0
Recipient Contribution	\$	\$	\$ 0
State Contribution	\$	\$	\$ 0
Local Contribution	\$	\$	\$ 0
Other Contribution	\$	\$	\$ 0
Allowable Project Cost	\$ 0	\$ 443,000	\$ 443,000

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.802 - Superfund State Political Subdivision and Indian Tribe Site Specific Cooperative Agreements	CERCLA: Sec. 104(d)(1)	40 CFR PTS 31 & 35 SUBPT O

Fiscal									
Site Name	DCN	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
VB/170	LRA036	04	T	8AL0R	302DD2C	4185	089RRA01	C001	443,000
									443,000

## Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$95,614
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3. Travel	\$0
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1. The recipient must submit an annual Performance/Progress Report within 90 days after the reporting period and a final report within 90 days after the expiration or termination of grant support in accordance with 40 CFR Part 31.40 (b) (2).
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**VASQUEZ BUELEVARD / INTERSTATE 70 SUPERFUND SITE  
OPERABLE UNIT 1 – RESIDENTIAL SOILS  
COMMUNITY HEALTH PROGRAM YEAR 4:  
INSTITUTIONAL CONTROLS AND MODEL PROGRAM GUIDE**

**PURPOSE**

The purpose of this Cooperative Agreement is for the Community Health Program (CHP), administered by the City and County of Denver (the City), Department of Environmental Health (DEH), to assist the EPA in achieving two goals:

- Establish and maintain institutional controls for residential soils at the Vasquez Boulevard/Interstate 70 Superfund Operable Unit 1 (VB/I-70) Site; and
- Develop a 'Guide for Developing and Implementing a Community Outreach Program'.

**BACKGROUND AND STATEMENT OF NEED**

The EPA, in cooperation with the Colorado Department of Public Health and Environment (CDPHE) and the City, conducted a clean-up of those residential soils within the VB/I-70 site that had elevated concentrations of lead and/or arsenic, in accordance with the September 23, 2003 Record of Decision (ROD). The site includes 4,863 residential properties, with 809 of those sampled requiring clean-up.

In order to carry out the cleanup, the EPA received access to properties from property owners, took samples of the soil, and tested it for lead and arsenic contamination. At those properties where EPA found soil contamination which met or exceeded the thresholds set out in the ROD, the agency also asked owners for permission to remove and replace the contaminated soil. The EPA, in collaboration with the CHP, made multiple attempts to contact the property owners, using both mail and home visits at the residence.

When the clean-up was complete, a small number of property owners had not provided voluntary access enabling the EPA to conduct the sampling and clean-up actions that the Record of Decision specified. As a result, the EPA has developed institutional controls to identify these properties, and therefore lessen the risk of potential exposure to current and future residents.

In order to implement these institutional controls, EPA is asking the City to do the following for all properties within the VB/I-70 site for which it was unable to complete the Remedial Action:

1. Notify property owners and residents annually of all properties not addressed by the Remedial Action;
2. Conduct soil screening for properties at the request of property owners;
3. Provide health information concerning lead and arsenic exposure; and

4. Add these properties to the appropriate city databases so that contractors and/or homeowners seeking a building permit are notified of the potential contamination issues.

In addition to soil sampling and remediation, the EPA and the City developed and implemented a Community Health Program for communities within the VB/I-70 site. The CHP was unique in that it combined the community health worker model with traditional site remediation activities, an approach that had not been previously attempted in the EPA CERCLA Program. The Program has received local and national attention, not only from the EPA, but by other government agencies and non-profit organizations. The EPA feels that the CHP may serve as a model for other programs, and as such, should be fully documented and evaluated. When complete, the program components and 'lessons learned' from the CHP's experience can be transferred and applied to a wide array of programs in other communities and settings both within the City of Denver and elsewhere.

In order to achieve this, the EPA is asking the City to:

5. Document and evaluate the CHP; and
6. Create a guide for developing and carrying out an effective and sustainable education and outreach program, capable of addressing an array of issues in other communities and settings.

### **TECHINICAL APPROACH**

The City Project Team (the Team) will conduct several general tasks to achieve each of EPA's two goals.

**Goal One:** Establish and maintain institutional controls for residential soils at VB/I70 OUI.

The Team will do this for each of two types of residences for which the EPA was unable to complete the Remedial Action. This will be accomplished by completing four general tasks.

The two types are:

- Priority 1: Properties that have been sampled and found to have elevated levels of lead and/or arsenic, but which have not been remediated; and
- Priority 2: Properties that have not been sampled.

Although the specific work activities will differ somewhat for each of these two types, the Team will accomplish six general tasks:

- Task 1.1 Develop a detailed field implementation plan

- Task 1.2 Notify owner and resident annually
- Task 1.3 Screen soils
- Task 1.4 Provide health information to the community
- Task 1.5 Providing support as appropriate for developing an interagency 'Property Flagging System'
- Task 1.6 Inform residents of site communities proactively regarding the 2008-2009 work activities and completion of the VB/170 OUI Program

More specifically, these general tasks will involve the following:

- Task 1.1: The Team will develop a schedule for conducting the three phases of fieldwork, i.e., planning, implementation, and close-out. The Team will evaluate progress during each phase and make adjustments as necessary.
- Task 1.2: The Team will create a notification letter for property owners and residents to inform them of its status, mailing an initial letter in 2008 and a final notification in 2009. This task also includes making a follow-up visit to each property in an effort to contact the residents and provide educational health information. The team member conducting the follow-up visit will utilize the PDA technology piloted by the CHP in previous years and the data will be transferred into the CHP database and reviewed/analyzed accordingly.
- Task 1.3: The Team will develop a protocol for soil screening using an XRF instrument, and provide soil screening if requested by the property owner. Screening will not be offered to those properties that the EPA has already sampled and found contaminated (Case 1), and whose owners declined remediation. Screening will be offered only during the 2008-2009 period of performance for this Cooperative Agreement.
- Task 1.4: The Team will develop a packet of health information directed at the owner and/or residents of both types of properties. The information will differ from that previously offered by DEH in that it will focus on potential contamination issues and the lifestyle changes that can reduce the risk of exposure to lead and arsenic. This information packet will be available to the owner and/or residents at the time of the initial home visit, the soil screening, or at their request. Arrangements will be made so that inquiries of other departments (see Task 1.5) as to the status of these properties are directed to DEH and the packet provided at that time.
- Task 1.5: The Team will coordinate with EPA in the development and implementation of a system that will 'flag' the previously unaddressed properties in the databases of other appropriate city departments (Building and Construction Permits, Assessor's Office).

The EPA will provide the City GIS department with the necessary map layer that identifies the unaddressed properties in the site area so that this information may be added to the appropriate City database. When the flagging system is fully implemented, information about these properties and their status will be available when inquiries are made or during the permit application process. Requests for further information may then be forwarded to DEH for copies of the health information packets.

- Task 1.6: The Team will conduct two meetings with residents of the VB/I-70 site communities, the first at the beginning of the project to inform residents of the work plan, its goals, and how the EPA and the City plan to address them, and the second either at or near the end of the program period to discuss what was accomplished and provide closure for the program activities. The Team will also develop and distribute a mid-program newsletter which will provide an update of the work being done. These activities are designed to maintain community involvement in the final stages of the program.

#### **Goal Two: Develop a 'Guide for Developing and Implementing a Community Outreach Program**

The Team will develop a 'Guide for Developing and Implementing a Community Outreach Program' (Guide), whose purpose is to serve as a vehicle for transferring and applying the concept, means, and 'lessons learned' of the CHP experience to issues and settings in other communities.

The work required to develop the Guide will be descriptive in order to document the specific components of the CHP, including:

- mission, goals, and objectives, and the activities conducted to achieve them
- program structure, including organization, staffing, and procedures
- tools, including training, outreach materials, and technology

The work will be evaluative in that it identifies 'lessons learned' from the CHP experience. The evaluative nature of the guide will make some of the specific programmatic elements more applicable to a variety of issues and in different settings. The EPA is particularly interested in those outcomes that may be plausibly attributed to the CHP, and the role that stakeholder assessment, involvement, and mobilization played.

The Team will achieve Goal 2 by accomplishing five general tasks:

- Task 2.1 Develop a detailed work plan and schedule
- Task 2.2 Develop the overarching conceptual framework for characterizing and evaluating the CHP

- Task 2.3 Identify and develop data required for describing and evaluating the CHP
- Task 2.4 Analyze data and develop recommendations
- Task 2.5 Design and develop the final Guide

More specifically, these tasks will involve the following:

- Task 2.1: The Team will develop a detailed work plan and schedule in order to accomplish the work activities listed above. Given the character of the work activities, including that some will be conducted concurrently, the Team will continue to specify and prioritize work activities as the project progresses.
- Task 2.2: The Team will develop a comprehensive, conceptual model of the CHP that will then be used to guide the subsequent descriptive and evaluative work activities. This conceptual model will be helpful in ensuring that the methods and procedures laid out in the Guide will fully reflect the work and accomplishments of the CHP, and will also serve as a basis for the final Guide's organization.
- Task 2.3: The Team will identify the specific data that will be required to describe and evaluate the CHP. Much of this data is already available and compiled in reports, but will need to be reformatted to fit the current scope. New materials will also be developed in order to properly evaluate the CHP, its outcomes, and the role of stakeholder assessment, mobilization, and involvement. Special attention will be paid to gauging the perceptions of key actors in the CHP, including representatives from the community.
- Task 2.4: The Team will analyze the data and identify the 'lessons learned' from the CHP experience. Based on these findings, the Team will develop recommendations regarding how the overarching model and CHP components should be modified to improve the model program and make it more generally applicable.
- Task 2.5: The Team will design and develop a 'Guide for Developing and Implementing a Community Outreach Program' for distribution. The Team will provide the EPA with both paper and digital copies.

## **ESTIMATED BUDGET**

The Goal One estimates are based on the level of effort and costs required for conducting similar activities during the previous three years of the CHP. The budgetary numbers for Goal Two are estimates based on the expected final product and the work required to produce it. The budget is fully funded by the VB/I-70 CHP Grant "carry-over" dollar. It should also be stated that there will be no additional funds made available for the completion of this project, and all work specified will be completed within the limits stated here.

<b>CATEGORY</b>	<b>GOAL 1: INSTITUTIONAL CONTROLS</b>	<b>GOAL 2: PROGRAM GUIDE</b>	<b>TOTAL</b>
<b>PERSONNEL (SALARY AND FRINGE)</b>	<b>\$81,130</b>	<b>\$112,104</b>	<b>\$193,234</b>
Berenice Omelas	\$23,182	\$35,000	\$58,182
Edgar Omelas	\$19,389	\$2,100	\$21,489
Jay Salas	\$17,958	\$26,937	\$44,895
Elizabeth Schiffman	\$20,601	\$48,067	\$68,668
<b>TRAINING</b>	<b>\$750</b>	<b>\$750</b>	<b>\$1,500</b>
<b>PRINTING</b>	<b>\$1,500</b>	<b>\$500</b>	<b>\$2,000</b>
<b>MAILING</b>	<b>\$1,800</b>	<b>\$200</b>	<b>\$2,000</b>
<b>SUPPLIES *</b>	<b>\$35,000</b>	<b>\$400</b>	<b>\$35,400</b>
<b>TRAVEL</b>	<b>\$4,000</b>	<b>n/a</b>	<b>\$4,000</b>
APHA Conference	\$3,300	n/a	\$3,300
CEHA Conference	\$700	n/a	\$700
<b>MILEAGE</b>	<b>\$200</b>	<b>\$100</b>	<b>\$300</b>
<b>CONTRACTOR</b>	<b>\$10,590</b>	<b>\$19,410</b>	<b>\$30,000</b>
<b>SUB-TOTAL/TOTAL</b>	<b>\$134,370</b>	<b>\$133,464</b>	<b>\$264,834</b>

\* Includes purchase of XRF to conduct soils screenings.

## CONSULTANT BIO

### George Weber, Inc. Environmental

George Weber is a consultant with more than 30 years of experience specializing in environmental policy analysis, planning, and implementation; stakeholder involvement and training; natural resource management; and community development and regional planning. He has managed or participated in more than 50 projects supporting federal, Tribal, state, and local government agencies, and business and special interest group clients. He has authored, coauthored, or directed development of more than 60 reports and publications, and has planned and conducted, presented, or facilitated at 19 conferences, workshops, panels, or significant meetings.

Recent projects have addressed Superfund Site clean-up, National Environmental Policy Act implementation, and Homeland Security and emergency response planning. He has particular expertise in public participation and stakeholder involvement. A unique aspect of the latter is that he has developed and applied an approach for researching, analyzing, and facilitating development of collaborating networks of stakeholders to address shared problems, particularly relating to carrying out environmental policies and projects. Much of Weber's work during the past twenty years has applied this stakeholder assessment and mobilization approach to supporting local, state, Tribal, and federal Safe Drinking Water, Ground Water, and Clean Water programs.

George Weber, Inc. has been supporting the VB/I-70 Superfund Clean-up over the past several years by:

- Assisting in developing the Feasibility Study and Record of Decision for VB/I-70 OU3, particularly conducting the community relations for the project.
- Planning and facilitating the VB/I-70 OU1 Working Group, by providing a forum for community representatives, the City, and other state and local governmental agencies to provide input to EPA about environmental clean-up requirements at the VB/I-70 Site.
- Applying its 'stakeholder assessment and mobilization' approach to develop an assessment of and strategy for mobilizing VB/I-70 stakeholders. The assessment had three goals: (1) Identify influential community leaders and organizations in the varied communities within the VB/I-70 Site that EPA had not identified already; (2) Develop a strategic action plan for obtaining the support and involvement of this community leadership in Program implementation in order to obtain full participation of Site residents, while avoiding existing and potential conflicts among the different communities and groups within the Site; and (3) Provide an example of an analytical approach to involving stakeholders that could be used synergistically with the standard, largely descriptive, EPA Community Relations approach that could be transferred and applied to other efforts addressing environmental issues in other communities and settings.



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## Unsampler Target Properties

Neighborhood	Address	Owner	MailingAddress	MailingCityStateZip
CLAYTON	3219 ADAMS ST	PROGRESSIVE CHURCH OF GOD IN	3205 ADAMS ST	DENVER CO 80205
CLAYTON	3435 ADAMS ST	GWENDOLYN BRYANT	3435 ADAMS ST	DENVER CO 80205
CLAYTON	3437 ADAMS ST	JEWELL D WILLIAMS	3437 ADAMS ST	DENVER CO 80205
CLAYTON	3830 ADAMS ST	JESUS MOLINA	3830 ADAMS ST	DENVER CO 80205
CLAYTON	3948 ADAMS ST	JOSEPH LEE SPEARS	3948 ADAMS ST	DENVER CO 80205
CLAYTON	3986 ADAMS ST	MARK A & LINDA D GRIEGO	3986 ADAMS ST	DENVER CO 80205
SWANSEA	5017 ADAMS ST	ARLENE A WELSCH	5017 ADAMS ST	DENVER CO 80216
	3421 ADAMS STREET	CARL FOLMER	3421 ADAMS STREET	DENVER, CO 80205
CLAYTON	2626 BRUCE RANDOLPH AV	DAVID C ROMERO	3250 S. HOYT WAY	LAKEWOOD CO 80227
CLAYTON	2904 BRUCE RANDOLPH AV	MARIE A KINDRED	2904 BRUCE RANDOLPH AVE	DENVER CO 80205
CLAYTON	2906 BRUCE RANDOLPH AV	NICHOLE DOUGLAS	2906 BRUCE RANDOLPH AVE	DENVER CO 80205
CLAYTON	3231 BRUCE RANDOLPH AV	TONI GOMEZ	2820 BIRCH ST	DENVER CO 80207
CLAYTON	3500 BRUCE RANDOLPH AV	EDGAR JR & LILLIE MAE JOHNSON	3500 E 34TH AVE	DENVER CO 80205
GLOBEVILLE	4411-4415 CHEROKEE ST	JAMES ACOSTA	4358 SHERMAN ST	DENVER CO 80216
GLOBEVILLE	4459 CHEROKEE ST	LINCOLN RAMEREZ	4459 CHEROKEE ST	DENVER CO 80216
GLOBEVILLE	4470 CHEROKEE ST	JESSIE RAMERIZ	4470 CHEROKEE ST	DENVER CO 80216
CLAYTON	3210 CLAYTON ST	CLARENCE W & VIVIAN MCCULLOUGH-GREEN	3210 CLAYTON ST	DENVER CO 80205
CLAYTON	3226 CLAYTON ST	ERMA JEAN MANIS	3226 CLAYTON ST	DENVER CO 80205
CLAYTON	3331 CLAYTON ST	JAMES SARTIN	3101 BRUCE RANDOLPH AVE	DENVER CO 80205
CLAYTON	3613 CLAYTON ST	ROBERT J VASQUEZ	3613 CLAYTON ST	DENVER CO 80205
CLAYTON	3620 CLAYTON ST	JOYCE M GREEN	2930 IVY ST	DENVER CO 80207
SWANSEA	4611 CLAYTON ST	CHARLES M JR DADY	4611 CLAYTON ST	DENVER CO 80216
SWANSEA	4541 CLAYTON STREET	FANNIE MAE	13455 NOEL ROAD #600	DALLAS, TX 75240
CLAYTON	3528 COLUMBINE ST	LENORA PATTERSON	3528 COLUMBINE ST	DENVER CO 80205
CLAYTON	3541-3547 COLUMBINE ST	YOLANDE C BROWER	1724 E 22ND AVE	DENVER CO 80205
SWANSEA	4653 COLUMBINE ST	MANUEL & JULIA TOMAS	4653 COLUMBINE ST	DENVER CO 80216
SWANSEA	4657 COLUMBINE ST	MARTIN MACIAS & JOSEPHINA CASILLAS	4657 COLUMBINE ST	DENVER CO 80216
CLAYTON	3220 COOK ST	ALAN SMITH	3220 COOK ST	DENVER CO 80205
CLAYTON	3334 COOK ST	DEWITT ANDREWS	3334 COOK ST	DENVER CO 80205
SWANSEA	4447 COOK ST VCNT	JAVIER & FRANCISCO VASQUEZ	4039 JASON ST	DENVER CO 80211
	3307 CURTIS ST	EDGAR TORRES & CHAE LIM	3307 CURTIS ST	DENVER, CO 80205
	3311 CURTIS ST	LACE & ANDREW TRIPPETT	1216 W 6TH AVE	BROOMFIELD, CO 80022
	3339 CURTIS ST	MARIA & JOSE MANUEL SERNA	3339 CURTIS ST	DENVER, CO 80205
GLOBEVILLE	4460 DELAWARE ST	PAUL & JOSEPHINE AGUIRRE	4460 DELAWARE ST	DENVER CO 80216

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<i>Neighborhood</i>	<i>Address</i>	<i>Owner</i>	<i>MailingAddress</i>	<i>MailingCityStateZip</i>
EBERTS	3351 DOWNING ST	MARIBEL & DANIEL GARZA	3351 DOWNING ST	DENVER, CO 80205
FIVE POINTS	3447 DOWNING ST	FRANKLIN MARTINEZ	3447 DOWNING ST	DENVER CO 80205
COLE	1633 E 33RD AVE	CARLA E ESQUIBEL	1633 E 33RD AVE	DENVER CO 80205
FIVE POINTS	1024-1026 E 34TH ST	WILLIAM G MAYFIELD	11450 CLARKSON ST	NORTHGLENN CO 80232
COLE	1526 E 35TH AVE	TERRY J SULLIVAN	1526 E 35TH AVE	DENVER CO 80205
COLE	2101-2115 E 37TH AVE	CARLTON CORNISH	12513 E. PACIFIC CIRCLE #1A	AURORA CO 80014
CLAYTON	3235 E 38TH AVE	BEN LOVATO	3235 E 38TH AVE	DENVER CO 80205
SWANSEA	2736 E 44TH AVE	DEBORAH DAVIS	1860 W 41ST AVE	DENVER CO 80216
CLAYTON	3246 ELIZABETH ST	PATRICIO GARCIA	3246 ELIZABETH ST	DENVER CO 80205
CLAYTON	3324 ELIZABETH ST	JACQUELINE F TURNER	3324 ELIZABETH ST	DENVER CO 80205
SWANSEA	4431 ELIZABETH ST	FELIPE ZARGOZA	4431 ELIZABETH ST	DENVER CO 80216
SWANSEA	4700 ELIZABETH ST	VINCENT W & MARIA G MEDINA	9819 OTIS OR	BROOMFIELD CO 80021
CLAYTON	3545 FILLMORE ST	VERA M SMITH	3545 FILLMORE ST	DENVER CO 80205
CLAYTON	3706 FILLMORE ST	JUAN JOSE QUEZADA	1232 ELLSWORTH BLVD	DENVER CO 80204
CLAYTON	3737 FILLMORE ST	FRANKLIN MARLON LEE	3737 FILLMORE ST	DENVER CO 80205
SWANSEA	4411 FILLMORE ST	NANCY BENCHOUAF	4421 FILLMORE	DENVER, CO 80216
SWANSEA	4421 FILLMORE ST	NANCY BENCHOUAF	4421 FILLMORE STREET	DENVER CO 80216
SWANSEA	4976 FILLMORE ST	MANUEL STEVEN LOBATO	4976 FILLMORE ST	DENVER CO 80216
SWANSEA	5001 FILLMORE ST APPRX	JASPER BAKER	5001 FILLMORE ST	DENVER, CO 80216
	3738-3742 FILLMORE STREE	JOAN & JOSE B AGUILAR	3738 FILLMORE STREET	DENVER, CO 80205
COLE	3220 FRANKLIN ST	ALMA N EDWARDS	3220 FRANKLIN ST	DENVER CO 80205
COLE	3230 FRANKLIN ST	JOSE LUIS AGULAR	3230 FRANKLIN ST	DENVER CO 80205
COLE	3232-3234 FRANKLIN ST	MANUEL & AGAPITA ARRIETA	3240 FRANKLIN ST	DENVER CO 80205
COLE	3246-3250 FRANKLIN ST	MARIA A CASILLAS	3246 FRANKLIN ST	DENVER CO 80205
COLE	3254-3256 FRANKLIN ST	JOSE LUIS AGUILAR	3254 FRANKLIN ST	DENVER CO 80205
COLE	3314 FRANKLIN ST	SHIRLEY A WELLS	2845 HOLLY ST	DENVER CO 80207
COLE	3701 FRANKLIN ST	GLORIA BISTILLOS	3701 FRANKLIN ST	DENVER CO 80205
COLE	3753 FRANKLIN ST	FABIAN RAMIREZ HINOJOS	3753 FRANKLIN ST	DENVER CO 80205
CLAYTON	3333 GARFIELD ST	PARK EAST HOUSE INC	1470 JERSEY ST	DENVER CO 80220
CLAYTON	3434 GARFIELD ST	WALTER WARE & TRACIE LEROUX-WARE	3434 GARFIELD ST	DENVER CO 80205
SWANSEA	4115 GARFIELD ST	HUGH P & MARY C HOGAN	4125 GARFIELD ST	DENVER CO 80216
COLE	3526 GAYLORD ST	MICHAEL ADAM IV GIBA	3526 GAYLORD ST	DENVER CO 80205
COLE	3700 GAYLORD ST	TELE COMM RESOURCE L.P.	312 W 4TH ST	CARSON CITY NV 89703
COLE	3713 GAYLORD ST	JOSE RODRIGUEZ AND GABRIELA CAROMONA	3713 GAYLORD ST	DENVER CO 80205
ELYRIA	4600 GAYLORD ST APPRX S	CITY AND COUNTY OF DENVER	144 W COLFAX AVE	DENVER CO 80202
COLE	3437 GILPIN ST	PREMIUM VENTURES OF COLORADO	10248 E JEWELL AVE #34	DENVER CO 80231

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<i>Neighborhood</i>	<i>Address</i>	<i>Owner</i>	<i>MailingAddress</i>	<i>MailingCityStateZip</i>
COLE	3445 GILPIN ST	JOSE GARCIA & PATRICIA MENDOZA	3445 GILPIN ST	DENVER CO 80205
COLE	3441 GILPIN ST VCNT	PREMIUM VENTURES OF COLORADO	10248 E JEWELL AVE #34	DENVER CO 80231
COLE	3244 HIGH ST	JOE & THERESA GARCIA	3244 HIGH ST	DENVER CO 80205
COLE	3359 HIGH ST	MATTHEW ROBERTS	3359 HIGH ST	DENVER CO 80205
COLE	3424 HIGH ST	JOSE L HERNANDEZ	3424 HIGH ST	DENVER CO 80205
COLE	3974 HIGH ST	WILLIE T HOUSTON	3974 HIGH ST	DENVER CO 80205
ELYRIA	4675 HIGH ST	STEVE BARDA	4677 HIGH ST	DENVER CO 80216
ELYRIA	4675-4679 HIGH ST	STEVE BARDA	4677 HIGH ST	DENVER CO 80216
ELYRIA	4685 HIGH ST	STEVE BARDA	4677 HIGH ST	DENVER CO 80216
	4791 HIGH ST	JOSE & JUANA LANDEROS	4791 HIGH ST	DENVER, CO 80216
COLE	3915 HUMBOLDT ST	CASTOR WALLACE	3915 HUMBOLDT ST.	DENVER CO 80205
COLE	3506 HUMBOLDT ST. VCNT	BILLY JOE & WYNEMA MCGEE	3400 GAYLORD ST.	DENVER CO 80205
SWANSEA	4135 JACKSON ST	EL MOSTAFA EL ASRI	4135 JACKSON ST	DENVER CO 80216
CLAYTON	3624-3626 JOSEPHINE ST	MARIA GUTIERREZ	3624 JOSEPHINE ST	DENVER CO 80205
SWANSEA	4401 JOSEPHINE ST	ANDREW M BROWN	4401 JOSEPHINE STREET	DENVER CO 80216
SWANSEA	4723-4725 JOSEPHINE ST	MARK SALAK	4723 JOSEPHINE ST	DENVER, CO 80216
SWANSEA	4701 JOSEPHINE ST APPRX	CITY & COUNTY OF DENVER	144 W COLFAX AVE	DENVER, CO 80202
SWANSEA	4700 JOSEPHINE ST APPRX	JOHN ZOLLARS	4700 JOSEPHINE ST	DENVER, CO 80216
COLE	3351 LAFAYETTE ST	DENVER NEW POINTS APARTMENTS	3351 LAFAYETTE ST	DENVER CO 80205
	3415 LARIMER ST	ONE GREEN EYE LLC	1399 35TH STREET	DENVER, CO 80205
EBERTS	3341 LAWRENCE ST	ELLEN MCELROY	3341 LAWRENCE ST	DENVER, CO 80205
FIVE POINTS	3405 LAWRENCE ST	PROPERTY OWNER	3405 LAWRENCE ST	Denver, CO80205
CLAYTON	3534 MADISON ST	JANINE JEANETTE IRVING	3534 MADISON ST	DENVER CO 80205
CLAYTON	3626 MADISON ST	THOMAS E TEOCKHORST	725 S ALTON WAY #3D	DENVER CO 80231
CLAYTON	3811 MADISON ST	THOMAS E TEOCKHORST	725 S ALTON WAY #3D	DENVER CO 80231
SWANSEA	4111 MADISON ST	LEO E & VIRGINIA M ROBINSON	4111 MADISON ST	DENVER CO 80216
SWANSEA	4001 MADISON ST APPRX	LAWRENCE LEE	4035 MADISON ST	DENVER CO 80216
COLE	3326 MARION ST	RICARDO & ESTANISLADA LUNA	3326 MARION ST	DENVER CO 80205
COLE	3342-3344 MARION ST.	ST MARTIN PLAZA INC	1580 LOGAN ST	DENVER CO 80203
COLE	1225 MARTIN LUTHER KING	WILLIAM MATTHEWS	10053 VINE CT	THORNTON CO 80229
COLE	1625 MARTIN LUTHER KING	DENVER GOSPEL HALL	1625 MARTIN LUTHER KING BV	DENVER CO 80205
COLE	1813-1815 MARTIN LUTHER	PATRICK & CATHERINECOMISKEY	1813 MARTIN LUTHER KING BV	DENVER CO 80205
COLE	1819 MARTIN LUTHER KING	PATRIC SR. & CATHERINE COMISKEY	1813 MARTIN LUTHER KING BV	DENVER CO 80205
COLE	3670 MARTIN LUTHER KING	JOSE AND DONOSO FLORES	3670 MARTIN LUTHER KING	DENVER, CO 80205
CLAYTON	3247 MILWAUKEE ST #11	HAROLD FRANKLIN	3247 MILWAUKEE ST #11	DENVER CO 80205
CLAYTON	3611 MILWAUKEE ST	FRANKLIN H & SEVIRIN J STRICKLAND	3611 MILWAUKEE ST	DENVER CO 80205

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<i>Neighborhood</i>	<i>Address</i>	<i>Owner</i>	<i>MailingAddress</i>	<i>MailingCityStateZip</i>
CLAYTON	3612 MILWAUKEE ST	KIM NALLEY-HODISON	7794 E 28TH AVE	DENVER CO 80206
SWANSEA	4735 MILWAUKEE ST	EUNICE M BURNHAM	4735 MILWAUKEE ST	DENVER CO 80216
SWANSEA	5143 MILWAUKEE ST	MARIA DE CORRAL DE CHAVEZ	5143 MILWAUKEE ST	DENVER, CO 80216
SWANSEA	5190 MILWAUKEE ST	RICARDO SANCHEZ	5190 MILWAUKEE ST	DENVER, CO 80216
CLAYTON	3255 MILWAUKEE ST #13	ALEJANDRO & ANA MARIA SOTO	3255 MILWAUKEE ST #13D	DENVER CO 80205
CLAYTON	3227 MILWAUKEE ST #5	JOSE COSTILLO & JUAN IBARRA	3227 MILWAUKEE ST #5	DENVER CO 80205
CLAYTON	3239 MILWAUKEE ST #9	MICHAEL SIMPSON & KYLE SHUD	4774 DOVER ST	COLORADO SPRINGS CO
SWANSEA	4000 MILWAUKEE ST APPRX	JESUS CARDENAS	4111 SAINT PAUL ST	DENVER CO 80216
CLAYTON	3621 MONROE ST	EUFEMIA DE LA ROCA	3621 MONROE ST	DENVER CO 80205
COLE	3545 RACE ST	DANIEL CRONA	3545 RACE ST	DENVER CO 80205
ELYRIA	4657 RACE ST	OLIVIA & ROBERT J BEALL	4657 RACE ST	DENVER CO 80216
ELYRIA	4666 RACE ST	VICENTE & GRACIELA DOMINGUEZ	4666 RACE ST	DENVER CO 80216
SWANSEA	4720 SAINT PAUL CT	RODRIGO CASTRO	4720 SAINT PAUL CT	DENVER CO 80216
SWANSEA	4775 SAINT PAUL CT	EVERETT JR & FRANCES HESTER	4775 SAINT PAUL CT	DENVER CO 80216
SWANSEA	4780 SAINT PAUL CT	JOSE R & ESTHER E ORTEGA	4780 SAINT PAUL CT	DENVER CO 80216
CLAYTON	3230 SAINT PAUL ST	ELVENIA L THOMAS	3234 SAINT PAUL ST	DENVER CO 80205
SWANSEA	4185 SAINT PAUL ST	MARIA CISNEROS AND NOE MARTINEZ	4185 SAINT PAUL ST	DENVER CO 80216
SWANSEA	4974 SAINT PAUL ST	PEDRO RAYA	4974 SAINT PAUL ST	DENVER CO 80216
SWANSEA	5064 SAINT PAUL ST	HUD	5312 BOLSA AVE #200	HUNTINGTON BEACH CA
SWANSEA	5185 SAINT PAUL ST	BYRON GOODEN JR	5175 SAINT PAUL ST	DENVER, CO 80216
SWANSEA	5194 SAINT PAUL ST	HECTOR AND BERTHA HERNANDEZ	5194 SAINT PAUL ST	DENVER CO 80216
CLAYTON	3545 STEELE ST	VICTOR QUAN	3545 STEELE ST	DENVER CO 80205
SWANSEA	4114 STEELE ST	JUAN GARCIA	4114 STEELE ST	DENVER CO 80214
SWANSEA	4419 STEELE ST	JOSE F & REGINA ROJAS	4419 STEELE ST	DENVER CO 80216
SWANSEA	4823 STEELE ST	CRS PROPERTIES LLC	PO BOX 370581	DENVER, CO 80237
SWANSEA	5125 STEELE ST	CHARLES DADY SR. AND CHARLES DADY JR.	5125 STEELE ST	DENVER CO 80216
	3800 STEELE ST APPRX	C C JR PROPPS	7996 W 6TH AVE	LAKEWOOD, CO 80215
CLAYTON	3900 STEELE ST APPRX	WINSTON SR HUFF & YAHYA RAHMAAN	2800 WILLIAMS ST	DENVER, CO 80205
SWANSEA	4548-4552 THOMPSON CT.	CURRENT HOMEOWNER	4548 THOMPSON CT.	DENVER CO 80216
ELYRIA	4345 VINE ST	JERRY SANCHEZ	601 KNOX CT	DENVER CO 80204
ELYRIA	4353 VINE ST	JERRY SANCHEZ	601 KNOX CT	DENVER CO 80204
FIVE POINTS	1212 W 34TH ST	CHRISTOPHER BIRT	333 N WASHINGTON AVE #404	MINNEAPOLIS, MN 88401
COLE	3240 WILLIAMS ST	CRESENCIO & ESPERANZA HERRERA	3240 WILLIAMS ST	DENVER CO 80205
COLE	3242 WILLIAMS ST	THELMA MELTON	3242 WILLIAMS ST	DENVER CO 80205
COLE	3426 WILLIAMS ST	KIM & SIDNEY NALLEY-HODISON	7794 E 28TH AVE	DENVER CO 80238
COLE	3439 WILLIAMS ST	ERNEST & JOHNNIE TURNER	3148 QUENTIN ST	AURORA CO 80011

*Friday, February 01, 2008*

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<i>Neighborhood</i>	<i>Address</i>	<i>Owner</i>	<i>MailingAddress</i>	<i>MailingCityStateZip</i>
COLE	3514 WILLIAMS ST	ROSE LINDA TORRES	3514 WILLIAMS ST	DENVER CO 80205
COLE	3518 WILLIAMS ST	MARIA ELENA GUTIERREZ	3518 WILLIAMS ST	DENVER CO 80205
COLE	3644 WILLIAMS ST	JULIAN WEST BUILDERS	3644 WILLIAMS ST	DENVER, CO 80205
ELYRIA	4644 WILLIAMS ST	ROBIN ALAN MANN	4645 WILLIAMS ST	DENVER CO 80216
EBERTS	4662 WILLIAMS ST	KRISTOPHER D KIRKMAN	3943 S QUEMICY WAY	AURORA, CO 80018
ELYRIA	4600 WILLIAMS STREET APP	ANGELINA T LUCERO	4600 WILLIAMS ST	DENVER CO 80216
CLAYTON	3232 YORK ST	JUSTIN D HANNEN	50 S BELLAIRE ST	DENVER CO 80222
COLE	3251 YORK ST	CECIL L CHALLENGER	3251 YORK ST	DENVER CO 80205
COLE	3701 YORK ST	TELE COMM RESOURCE L P	312 FOURTH ST	CARSON CITY, NV 89703
SWANSEA	4634 YORK ST	CHARLES LAWSON KRUGER	4634 YORK ST	DENVER CO 80216
ELYRIA	4601 YORK ST APPRX	OCTAVIO & IRENE MONTOYA BARRAZA	4705 QUAY ST	WHEAT RIDGE, CO 80033

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*Friday, February 01, 2008*

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# VB/I-70 Year 4 Performance Plan

Goals	Outcomes	Outputs and Milestones	Responsible Party(ies)	Tracking
<b>Establish and maintain institutional controls for residential soils at VB/170 OU1</b> <b>Priority 1: Properties that have been sampled and found to have elevated levels of lead and/or arsenic, but which have not been remediated</b>	<i>Mid Summer</i>	Task 1.1 Develop a detailed field implementation plan Task 1.2 Notify owner and resident annually Task 1.4 Provide health information to the community Task 1.5 Providing support as appropriate for developing an interagency 'Property Flagging System' Task 1.6 Inform residents of site communities proactively regarding the 2008-2009 work activities and completion of the VB/170 OU1 Program	• JS, ES, EO, AL	Task 1.1 Complete Task 1.2 Complete Task 1.3 Complete Task 1.4 Complete Task 1.5 Pending Task 1.6 In Progress
<b>Establish and maintain institutional controls for residential soils at VB/170 OU1</b> <b>Priority 2: Properties that have not been sampled.</b>	<i>Updated data base - Complete April 2009</i>	Task 1.1 Develop a detailed field implementation plan Task 1.2 Notify owner and resident annually Task 1.3 Screen soils Task 1.4 Provide health information to the community Task 1.5 Providing support as appropriate for developing an interagency 'Property Flagging System' Task 1.6 Inform residents of site communities proactively regarding the 2008-2009 work activities and completion of the VB/170 OU1 Program	• JS, ES, EO	Task 1.1 Complete Task 1.2 Complete Task 1.3 Complete Task 1.4 Complete Task 1.5 Pending Task 1.6 In Progress
<b>Develop a 'Guide for Developing and Implementing a Community Outreach Program</b> <b>Component 1: mission, goals, and objectives, and the activities conducted to achieve them</b> <b>Component 2: program structure, including organization, staffing, and</b>	<i>Complete April 2009</i>	Task 2.1 Develop a detailed work plan and schedule Task 2.2 Develop the overarching conceptual framework for characterizing and evaluating the CHP Task 2.3 Identify and develop data required for describing and evaluating the CHP Task 2.4 Analyze data and develop recommendations Task 2.5 Design and develop the final Guide	• JS, ES	Task 2.1 Complete Task 2.2 Complete Task 2.3 Complete Task 2.4 Complete Task 2.5 In Progress

**VB/I-70 Year 4 Performance Plan**

<b>Goals</b>	<b>Outcomes</b>	<b>Outputs and Milestones</b>	<b>Responsible Party(ies)</b>	<b>Tracking</b>
procedures <b>Component 3: tools, including training, outreach materials, and technology</b>				

- I. Introduction—similar in many ways to running a small business or NGO
- II. Planning—stress importance of planning phase coming *before* execution as much as possible; often little time for this, but essential to a well-run program
  - a. Program Description—getting started
    - i. Getting to know your neighborhoods/target area—assessing strengths and weaknesses
  - b. Identification and Definition of Program Goals and Objectives—Community Health Education and Outreach Plan (CHEOP)
    - i. Developing—scope of work, timelines, realistic expectations, budget
    - ii. Editing and Finalizing
    - iii. Considerations—possible pitfalls, limitations
    - iv. Incorporating flexibility and opportunities for change later if needed
  - c. Collaboration With Other Agencies and Organizations
    - i. Community Input
    - ii. Roles and Responsibilities
    - iii. Division of Tasks
    - iv. Reporting—when/how to effectively collaborate,
  - d. Stakeholder Identification
    - i. Working with community groups and neighborhood orgs.—assessing strengths and weaknesses of communities
    - ii. Community Meetings
  - e. Staff hiring and training
    - i. Program Staff—need people who are innovative and able to roll with situations; ADAPTABILITY
    - ii. CHWs
      - 1. preferably familiar with or from target community  
BUT must have skills for job
      - 2. management challenges
      - 3. recruitment and retaining employees
- III. Execution
  - a. Community Involvement—keep them ‘stocked’ with information as much as possible to minimize misunderstandings
    - i. Stakeholder meetings, other ‘committee’ meetings as needed
    - ii. Involvement in Program—input on some outreach materials
    - iii. Newsletter
  - b. Methods

- i. GIS Mapping/Canvassing Lists
    - ii. Accounting—careful budget monitoring a must!
    - iii. Canvassing Outreach Materials
    - iv. Additional Community Outreach—realtor, contractor, housing inspectors (letters, Realtor Rally, meetings) [VB failure]
  - c. Policies and Procedures
    - i. Program
      - 1. Billing/accounting
      - 2. Reports
    - ii. CHWs/Personnel
  - d. Field Work
    - i. Initial Neighborhood Walk-Through
    - ii. Safety—animal control training, personal safety training, other?
    - iii. Scheduling and Tracking
    - iv. Field office—is it necessary? what supplies/equip. are needed?
  - e. Data Collection, Storage, and Management
    - i. Electronic vs. Paper
    - ii. Confidentiality Issues—role of community trust; also dependent on type of info collected
    - iii. Database Creation and Management
- IV. Program Completion and Evaluation
  - a. Official program close-out with funder (involves reporting of outcomes) vs. program close-out with community (feel-good mtg. about accomplishments)
  - b. Final Reports and document/information storage and archiving
  - c. Final Assessment—formal 3<sup>rd</sup> party assessment critical [VB failure]
  - d. Sustainability and Long-Term Impacts—small grants? community group to carry on work? [VB failure on certain levels]

**VASQUEZ BUELEVAR / INTERSTATE 70 SUPERFUND SITE  
OPERABLE UNIT 1 – RESIDENTIAL SOILS  
COMMUNITY HEALTH PROGRAM YEAR 4:  
INSTITUTIONAL CONTROLS AND MODEL PROGRAM GUIDE**

**PURPOSE**

The purpose of this Cooperative Agreement is for the Community Health Program (CHP), administered by the City and County of Denver (the City), Department of Environmental Health (DEH), to assist the EPA in achieving two goals:

- Establish and maintain institutional controls for residential soils at the Vasquez Boulevard/Interstate 70 Superfund Operable Unit 1 (VB/I-70) Site; and
- Develop a 'Guide for Developing and Implementing a Community Outreach Program'.

**BACKGROUND AND STATEMENT OF NEED**

The EPA, in cooperation with the Colorado Department of Public Health and Environment (CDPHE) and the City, conducted a clean-up of those residential soils within the VB/I-70 site that had elevated concentrations of lead and/or arsenic, in accordance with the September 23, 2003 Record of Decision (ROD). The site includes 4,863 residential properties, with 809 of those sampled requiring clean-up.

In order to carry out the cleanup, the EPA received access to properties from property owners, took samples of the soil, and tested it for lead and arsenic contamination. At those properties where EPA found soil contamination which met or exceeded the thresholds set out in the ROD, the agency also asked owners for permission to remove and replace the contaminated soil. The EPA, in collaboration with the CHP, made multiple attempts to contact the property owners, using both mail and home visits at the residence.

When the clean-up was complete, a small number of property owners had not provided voluntary access enabling the EPA to conduct the sampling and clean-up actions that the Record of Decision specified. As a result, the EPA has developed institutional controls to identify these properties, and therefore lessen the risk of potential exposure to current and future residents.

In order to implement these institutional controls, EPA is asking the City to do the following for all properties within the VB/I-70 site for which it was unable to complete the Remedial Action:

1. Notify property owners and residents annually of all properties not addressed by the Remedial Action;
2. Conduct soil screening for properties at the request of property owners;
3. Provide health information concerning lead and arsenic exposure; and

4. Add these properties to the appropriate city databases so that contractors and/or homeowners seeking a building permit are notified of the potential contamination issues.

In addition to soil sampling and remediation, the EPA and the City developed and implemented a Community Health Program for communities within the VB/I-70 site. The CHP was unique in that it combined the community health worker model with traditional site remediation activities, an approach that had not been previously attempted in the EPA CERCLA Program. The Program has received local and national attention, not only from the EPA, but by other government agencies and non-profit organizations. The EPA feels that the CHP may serve as a model for other programs, and as such, should be fully documented and evaluated. When complete, the program components and 'lessons learned' from the CHP's experience can be transferred and applied to a wide array of programs in other communities and settings both within the City of Denver and elsewhere.

In order to achieve this, the EPA is asking the City to:

5. Document and evaluate the CHP; and
6. Create a guide for developing and carrying out an effective and sustainable education and outreach program, capable of addressing an array of issues in other communities and settings.

### **TECHINICAL APPROACH**

The City Project Team (the Team) will conduct several general tasks to achieve each of EPA's two goals.

#### **Goal One: Establish and maintain institutional controls for residential soils at VB/I70 OU1**

The Team will do this for each of two types of residences for which the EPA was unable to complete the Remedial Action. This will be accomplished by completing four general tasks.

The two types are:

- Priority 1: Properties that have been sampled and found to have elevated levels of lead and/or arsenic, but which have not been remediated; and
- Priority 2: Properties that have not been sampled.

Although the specific work activities will differ somewhat for each of these two types, the Team will accomplish six general tasks:

- Task 1.1 Develop a detailed field implementation plan



- Task 1.2 Notify owner and resident annually
- Task 1.3 Screen soils
- Task 1.4 Provide health information to the community
- Task 1.5 Providing support as appropriate for developing an interagency 'Property Flagging System'
- Task 1.6 Inform residents of site communities proactively regarding the 2008-2009 work activities and completion of the VB/170 OUI Program

More specifically, these general tasks will involve the following:

- Task 1.1: The Team will develop a schedule for conducting the three phases of fieldwork, i.e., planning, implementation, and close-out. The Team will evaluate progress during each phase and make adjustments as necessary.
- Task 1.2: The Team will create a notification letter for property owners and residents to inform them of its status, mailing an initial letter in 2008 and a final notification in 2009. This task also includes making a follow-up visit to each property in an effort to contact the residents and provide educational health information. The team member conducting the follow-up visit will utilize the PDA technology piloted by the CHP in previous years and the data will be transferred into the CHP database and reviewed/analyzed accordingly.
- Task 1.3: The Team will develop a protocol for soil screening using an XRF instrument, and provide soil screening if requested by the property owner. Screening will not be offered to those properties that the EPA has already sampled and found contaminated (Case 1), and whose owners declined remediation. Screening will be offered only during the 2008-2009 period of performance for this Cooperative Agreement.
- Task 1.4: The Team will develop a packet of health information directed at the owner and/or residents of both types of properties. The information will differ from that previously offered by DEH in that it will focus on potential contamination issues and the lifestyle changes that can reduce the risk of exposure to lead and arsenic. This information packet will be available to the owner and/or residents at the time of the initial home visit, the soil screening, or at their request. Arrangements will be made so that inquiries of other departments (see Task 1.5) as to the status of these properties are directed to DEH and the packet provided at that time.
- Task 1.5: The Team will coordinate with EPA in the development and implementation of a system that will 'flag' the previously unaddressed properties in the databases of other appropriate city departments (Building and Construction Permits, Assessor's Office).

The EPA will provide the City GIS department with the necessary map layer that identifies the unaddressed properties in the site area so that this information may be added to the appropriate City database. When the flagging system is fully implemented, information about these properties and their status will be available when inquiries are made or during the permit application process. Requests for further information may then be forwarded to DEH for copies of the health information packets.

- Task 1.6: The Team will conduct two meetings with residents of the VB/I-70 site communities, the first at the beginning of the project to inform residents of the work plan, its goals, and how the EPA and the City plan to address them, and the second either at or near the end of the program period to discuss what was accomplished and provide closure for the program activities. The Team will also develop and distribute a mid-program newsletter which will provide an update of the work being done. These activities are designed to maintain community involvement in the final stages of the program.

#### **Goal Two: Develop a 'Guide for Developing and Implementing a Community Outreach Program**

The Team will develop a 'Guide for Developing and Implementing a Community Outreach Program' (Guide), whose purpose is to serve as a vehicle for transferring and applying the concept, means, and 'lessons learned' of the CHP experience to issues and settings in other communities.

The work required to develop the Guide will be descriptive in order to document the specific components of the CHP, including:

- mission, goals, and objectives, and the activities conducted to achieve them
- program structure, including organization, staffing, and procedures
- tools, including training, outreach materials, and technology

The work will be evaluative in that it identifies 'lessons learned' from the CHP experience. The evaluative nature of the guide will make some of the specific programmatic elements more applicable to a variety of issues and in different settings. The EPA is particularly interested in those outcomes that may be plausibly attributed to the CHP, and the role that stakeholder assessment, involvement, and mobilization played.

The Team will achieve Goal 2 by accomplishing five general tasks:

- Task 2.1 Develop a detailed work plan and schedule
- Task 2.2 Develop the overarching conceptual framework for characterizing and evaluating the CHP

- Task 2.3 Identify and develop data required for describing and evaluating the CHP
- Task 2.4 Analyze data and develop recommendations
- Task 2.5 Design and develop the final Guide

More specifically, these tasks will involve the following:

- Task 2.1: The Team will develop a detailed work plan and schedule in order to accomplish the work activities listed above. Given the character of the work activities, including that some will be conducted concurrently, the Team will continue to specify and prioritize work activities as the project progresses.
- Task 2.2: The Team will develop a comprehensive, conceptual model of the CHP that will then be used to guide the subsequent descriptive and evaluative work activities. This conceptual model will be helpful in ensuring that the methods and procedures laid out in the Guide will fully reflect the work and accomplishments of the CHP, and will also serve as a basis for the final Guide's organization.
- Task 2.3: The Team will identify the specific data that will be required to describe and evaluate the CHP. Much of this data is already available and compiled in reports, but will need to be reformatted to fit the current scope. New materials will also be developed in order to properly evaluate the CHP, its outcomes, and the role of stakeholder assessment, mobilization, and involvement. Special attention will be paid to gauging the perceptions of key actors in the CHP, including representatives from the community.
- Task 2.4: The Team will analyze the data and identify the 'lessons learned' from the CHP experience. Based on these findings, the Team will develop recommendations regarding how the overarching model and CHP components should be modified to improve the model program and make it more generally applicable.
- Task 2.5: The Team will design and develop a 'Guide for Developing and Implementing a Community Outreach Program' for distribution. The Team will provide the EPA with both paper and digital copies.

## **ESTIMATED BUDGET**

The Goal One estimates are based on the level of effort and costs required for conducting similar activities during the previous three years of the CHP. The budgetary numbers for Goal Two are estimates based on the expected final product and the work required to produce it. The budget is fully funded by the VB/I-70 CHP Grant "carry-over" dollar. It should also be stated that there will be no additional funds made available for the completion of this project, and all work specified will be completed within the limits stated here.

<b>CATEGORY</b>	<b>GOAL 1: INSTITUTIONAL CONTROLS</b>	<b>GOAL 2: PROGRAM GUIDE</b>	<b>TOTAL</b>
<b>PERSONNEL (SALARY AND FRINGE)</b>	<b>\$81,130</b>	<b>\$112,104</b>	<b>\$193,234</b>
Berenice Ornelas	\$23,182	\$35,000	\$58,182
Edgar Omelas	\$19,389	\$2,100	\$21,489
Jay Salas	\$17,958	\$26,937	\$44,895
Elizabeth Schiffman	\$20,601	\$48,067	\$68,668
<b>TRAINING</b>	<b>\$750</b>	<b>\$750</b>	<b>\$1,500</b>
<b>PRINTING</b>	<b>\$1,500</b>	<b>\$500</b>	<b>\$2,000</b>
<b>MAILING</b>	<b>\$1,800</b>	<b>\$200</b>	<b>\$2,000</b>
<b>SUPPLIES *</b>	<b>\$35,000</b>	<b>\$400</b>	<b>\$35,400</b>
<b>TRAVEL</b>	<b>\$4,000</b>	<b>n/a</b>	<b>\$4,000</b>
APHA Conference	\$3,300	n/a	\$3,300
CEHA Conference	\$700	n/a	\$700
<b>MILEAGE</b>	<b>\$200</b>	<b>\$100</b>	<b>\$300</b>
<b>CONTRACTOR</b>	<b>\$10,590</b>	<b>\$19,410</b>	<b>\$30,000</b>
<b>SUB-TOTAL/TOTAL</b>	<b>\$134,370</b>	<b>\$133,464</b>	<b>\$264,834</b>

\* Includes purchase of XRF to conduct soils screenings.

## CONSULTANT BIO

### George Weber, Inc. Environmental

George Weber is a consultant with more than 30 years of experience specializing in environmental policy analysis, planning, and implementation; stakeholder involvement and training; natural resource management; and community development and regional planning. He has managed or participated in more than 50 projects supporting federal, Tribal, state, and local government agencies, and business and special interest group clients. He has authored, coauthored, or directed development of more than 60 reports and publications, and has planned and conducted, presented, or facilitated at 19 conferences, workshops, panels, or significant meetings.

Recent projects have addressed Superfund Site clean-up, National Environmental Policy Act implementation, and Homeland Security and emergency response planning. He has particular expertise in public participation and stakeholder involvement. A unique aspect of the latter is that he has developed and applied an approach for researching, analyzing, and facilitating development of collaborating networks of stakeholders to address shared problems, particularly relating to carrying out environmental policies and projects. Much of Weber's work during the past twenty years has applied this stakeholder assessment and mobilization approach to supporting local, state, Tribal, and federal Safe Drinking Water, Ground Water, and Clean Water programs.

George Weber, Inc. has been supporting the VB/I-70 Superfund Clean-up over the past several years by:

- Assisting in developing the Feasibility Study and Record of Decision for VB/I-70 OU3, particularly conducting the community relations for the project.
- Planning and facilitating the VB/I-70 OU1 Working Group, by providing a forum for community representatives, the City, and other state and local governmental agencies to provide input to EPA about environmental clean-up requirements at the VB/I-70 Site.
- Applying its 'stakeholder assessment and mobilization' approach to develop an assessment of and strategy for mobilizing VB/I-70 stakeholders. The assessment had three goals: (1) Identify influential community leaders and organizations in the varied communities within the VB/I-70 Site that EPA had not identified already; (2) Develop a strategic action plan for obtaining the support and involvement of this community leadership in Program implementation in order to obtain full participation of Site residents, while avoiding existing and potential conflicts among the different communities and groups within the Site; and (3) Provide an example of an analytical approach to involving stakeholders that could be used synergistically with the standard, largely descriptive, EPA Community Relations approach that could be transferred and applied to other efforts addressing environmental issues in other communities and settings.



JOHN W. HICKENLOOPER  
Mayor

# CITY AND COUNTY OF DENVER

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Nancy J. Severson, Manager

201 W. Colfax, Dept. 1009,  
Denver, CO. 80202  
PHONE: (720) 865-5365  
FAX: (720) 865-5531  
[www.denvergov.org/health-environment](http://www.denvergov.org/health-environment)

May 23, 2007

Larry Kimmel  
Remedial Project Manager  
US EPA, Region VII  
1595 Wynkoop St  
Denver, CO 80202-1129

Re: VB/I-70 Superfund Site Phase II Community Health Program—Cooperative Agreement Extension Proposal

Dear Mr. Kimmel:

Attached is the Department of Environmental Health's proposal to extend the VB/I-70 Community Health Program through December of 2008. The current DEH-EPA cooperative agreement expires on 12/31/2007. This proposal covers both the implementation and/or completion of activities included in the original cooperative agreement and its amendments, as well as several newly proposed work products. The proposal requires the commitment of no additional funds and will be sustained solely by existing program surplus resources. Should you have any questions, please feel free to contact me at 720-913-1516.

Sincerely,

A handwritten signature in black ink, appearing to read "Martha F. Hoff".

Martha F. Hoff, CIH, CSP

cc: Victor Ketellapper – EPA Region VIII  
Jennifer Chergo – EPA Region VIII  
Pat Courtney – EPA Region VIII  
Nancy Severson – Department of Environmental Health  
Sherry Purdy – Department of Environmental Health  
Jason Salas – Department of Environmental Health  
Celia VanDerLoop – Department of Environmental Health  
Alice Luhan – Department of Environmental Health

# **Vasquez Boulevard/Interstate 70 Community Health Program Cooperative Agreement Extension Proposal**

## **Targeted Outreach Projects**

Outreach during the VB/I-70 Community Health Program years one through three predominantly focused on residential outreach via door-to-door canvassing and summertime biomonitoring outreach. Minor, secondary outreach venues included community events, schools, and daycares. Limited mailing-based outreach to area real estate professionals and contractors was also completed. By mid-way through year one the program staff already recognized, through canvassing experience and resident dialogue, the need for targeted outreach venues relative to more effective childhood lead poisoning prevention. Projects (a) through (d) were planned and budgeted for in years two and three. Due to the time required to complete two home visits to each residence over a two and half year canvassing period (March 2005 – September 2007), planned targeted-venue outreach has not yet been undertaken. Project (e), originally identified in the VB/I-70 Community Health Education and Outreach Plan (CHEOP), has not been implemented. A program extension through December of 2008 would allow for these planned projects to be completed and to continue the professional development of select community health workers.

- (a) New Mother Education—This project will effectively target mothers who have recently given birth and provide continually reinforced support for lead poisoning prevention behaviors along with the importance of blood-lead testing. This project provides for both program and community prevention advocacy sustainability as it will be designed with high portability and ease of implementation, allowing it to be effectively transferred to community partner organizations.
- (b) Community-based Social Marketing Analysis—This project will focus on small parent group dialogue to elucidate and define effective lead-poisoning prevention behaviors, barriers to these behaviors, and effective outreach methodologies relevant to the socio-economic and diverse cultural and sub-cultural demographics of VB/I-70 resident parents. This project will provide program and prevention sustainability as it will identify specific and effective prevention behaviors that will ultimately tightly focus future prevention advocacy methods and efforts.
- (c) Lead Safety Work-Practices—Dialogue with residents during canvassing indicates that approximately 10 to 13% of homes have at least one adult working in construction that lives in the home. This project will provide basic lead awareness and training to VB/I-70 resident construction and trades laborers. Outreach will focus on work strategies that reduce the potential for work-site (typically residential construction) lead contamination and cross-transfer to the worker's home and family.
- (d) Contemporaneously, training will provide very basic information on worker and family safety and health relative to other recognized hazards, e.g. pesticides and asbestos.
- (e) Window cleaning campaign—This project will create and distribute an outreach tool designed specifically to teach a home resident the correct way to clean a window that has deteriorating lead-based paint. The tool will also include how-to guidance on wet mopping and damp dusting. These three activities comprise the most important lead-safe cleaning practices easily employed in the home. This project provides for program and prevention sustainability as it will be designed with high portability and ease of implementation, allowing for it to be effectively transferred to community partner organizations.
- (f) Youth education project—This project will create and execute a school-based education campaign designed to teach environmental health awareness, especially lead-based paint

poisoning prevention. The project will employ a dynamic and interactive class-room based learning module. VB/I-70 program staff recognizes that due to the linguistic characteristics of many area residents, bilingual children create a vital pathway to the education of monolingual parents. The VB/I-70 community continually expresses support for youth education and advocacy. This project provides for program and prevention sustainability as it will be designed with high portability and ease of implementation, allowing for it to be effectively transferred to community schools and partner organizations.

### **Program Implementation Guide**

The VB/I-70 Community Health Program is an outreach concept that is unique to both environmental health and Superfund outreach. Since it is large in design (work volume and operational time) much has been learned, fine-tuned, and stream-lined since its early conception. The program is highly successful in reaching Superfund site residents, as well as imparting vital information. To provide for sustainability of this outreach model an implementation guide will be developed covering the multitude of implementation factors that must be considered and addressed in deploying a program of this type (e.g. diverse facets of the community involvement process, developing effective outreach methods, field work infrastructure, community health worker management, evaluation systems, information technology systems, and administrative systems).

### **Program Sustainability**

As recorded in the VB/I-70 Community Health Education and Outreach Plan (CHEOP), the Department of Environmental Health is actively pursuing the identification of both program growth avenues and new funding sources. The VB/I-70 CHP has the potential to expand its current geographical boundaries and to expand to multiple topical foci. A program extension through 2008 will allow for the development of marketing tools, audience identification, funding sources identification, as well as the ability to apply for and secure future funding. Additionally, VB/I-70 staff is highly dedicated to advancing the professional growth of several Community Health Workers who exhibit a high degree of interest in environmental health issues and a passion for community education and advocacy. The extension will train these community health workers to be trained as lead-poisoning and environmental health liaisons, performing environmental lead investigations and environmental health outreach in VB/I-70.

### **Geophagy and Pica Data Analysis/Reporting**

For the duration of canvassing activities, resident self-reported data on pica behavior and cultural geophagy practices have been collected. Analyses of these data sets will provide knowledge about soil pica behavior in an Environmental Justice community setting, as well as supply a rare look at cultural geophagy practices in the Denver area. There are few geophagy data available in the scientific community, making the VB/I-70 CHP data set an important component of understanding these practices in a culturally diverse community. Pica and geophagy behaviors greatly increase resident's exposure potential for chemicals in soil.

### **Blood-lead Data Management and Analysis**

One goal of the Community Health Program was to develop a comprehensive electronic data management system to store, track, and manipulate environmental, biologic, and demographic data for use in managing blood lead cases and for targeting educational outreach efforts. An electronic data management tool was developed during years one and two. The tool provides



data analysis capabilities for these efforts in the VB/I-70 area, and is expandable into a City-level analysis tool. However, a critical input component for lead data analysis was unexpectedly and recently lost at the State level. State programmatic changes have eliminated the availability of surveillance data through its lead poisoning prevention program. The proposed extension will provide CHP funding to help support the input of blood lead surveillance data into a State-level database, to subsequently compile and funnel the data into the CHP's electronic data system, and then to analyze the data. This will add sustainability to the CHP efforts in providing for the usability of the electronic system as a VB/I70-specific and City-level childhood lead poisoning prevention program management tool.

VB/I-70 CHP Year Four -- Budget Proposal		
Staffing	FTE	Salary/Fringe/Indirect
Community Health Workers	2.00	\$109,564
Program Coordinator	0.50	\$38,822
Program Administrator	0.50	\$38,822
	<b>subtotal</b>	<b>\$187,208</b>
Contracts	Contractor	
	CDPHE	\$9,000
	<b>subtotal</b>	<b>\$9,000</b>
Supplies		
		\$6,000
	<b>subtotal</b>	<b>\$6,000</b>
	<b>Total</b>	<b>\$202,208</b>

# STAFFING-ACTIVITY ALLOCATIONS

		FTE				NOTES
		CHW	Salas	Hoff	Hook	
Targeted Outreach Projects	New Mother Education	0.35			0.00	
	Community-based Social Marketing Analyses	0.25			0.00	
	Lead-safety Work Practices	0.30			0.00	
	Window Cleaning Campaign	0.35			0.00	
	Youth Education Projects	0.15			0.00	
	Subtotal	1.40	0.27	0.24	0.00	
Sustainability	Lead investigations training and apprenticing	0.25			0.00	
	Environmental health education/community liasons	0.35			0.00	
	Program marketing	0.00			0.00	
	Funding acquisition	0.00			0.00	
	Subtotal	0.60	0.20	0.20	0.00	
Geophagy/Pica Data	Analysis and reporting	0.00	0.03	0.05	0.00	
	Subtotal	0.00	0.03	0.05	0.00	
Blood-lead Data	Analysis and reporting	0.00	0.00	0.01	(0.10)	in-kind
	Subtotal	0.00	0.00	0.01	(0.10)	in-kind
	TOTAL	2.00	0.50	0.50	(0.10)	in-kind



JOHN W. HICKENLOOPER  
Mayor

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DEPARTMENT OF ENVIRONMENTAL HEALTH  
Nancy J. Severson, Manager

201 W. Colfax, Dept. 1009  
Denver, CO. 80202  
PHONE: (720) 865-5365  
FAX: (720) 865-5531  
[www.denvergov.org/health-environment](http://www.denvergov.org/health-environment)

July 18, 2006

Olive Hofstader  
8TMS-G  
U.S. Environmental Protection Agency  
999 18<sup>th</sup> Street  
Denver, CO 80202

Re: VB/I-70 Superfund Site Phase II Community Health Plan—Agreement Amendment

Dear Ms. Hofstader:

Enclosed please find completed forms SF 424 and SF 424a for the agreed upon EPA grant to the Department of Environmental Health (DEH) to enable a third year of the community health program (CHP) for the VB/I-70 Superfund Site.

This amendment, in the amount of \$337,835, will fund the third year activities of the three-year VB/I-70 Community Health Program, as detailed in the enclosed scope of work. These activities are a continuation of select portions of the 2004 VB/I-70 CHP Phase II cooperative agreement between the EPA and DEH and its first amendment. This amendment and the third program year will terminate on October 31, 2007. Corollary interagency partner responsibilities are outlined in the VB/I-70 Memorandum of Agreement, as referenced in the original CA.

As soon as we receive EPA's grant offer we will initiate the City's approval process. Our grant acceptance rules may require us to arrange for grant funding in annual amounts or call for some restatement of activity for better clarity. We will contact you if necessary.

Please contact Celia VanDerLoop if you have questions. Our staff looks forward to working with all the project participants on this important endeavor. Thank you for supporting our efforts to protect public health.

Sincerely,

A handwritten signature in black ink, appearing to read "Nancy J. Severson", with a long horizontal line extending to the right.

Nancy J. Severson  
Manager

cc: Victor Ketellapper – EPA Region XIII

## **Community Health Program for VB/I-70 Superfund Site**

### **Cooperative Agreement Amendment Number 2**

This amendment to the Vasquez Boulevard and Interstate 70 (VB/I-70) Superfund Site cooperative agreement between the Denver Department of Environmental Health and the U.S. Environmental Protection Agency (EPA) provides for the third year of the three year VB/I-70 Community Health Program (CHP). These funds provide for the scope of work outlined below, which is a continuation of select portions of the tasks outlined in the cooperative agreement dated November 4, 2004 and the first amendment dated October 11, 2005.

#### **October 2006 – October 2007 VB/I-70 Community Health Program Task Outline**

1. Residential canvassing (door-to-door) and outreach to provide lead poisoning prevention education supplemented by timely material on community relevant issues
2. Neighborhood outreach at events and meetings (as requested by community)
3. Real estate outreach (VB/I-70 listing agents only) via continued mailing of lead-related outreach material
4. Contractor outreach (VB/I-70 residents) covering lead-safe workpractices and environmental health and safety outreach through events, workshops and table displays to day laborers and informal sector employees (audience access via canvassing and community contacts); workshop training contracted to Northeast Denver Housing Center
5. Evaluation of canvassing impact to gauge degree of behavior change related to increased lead poisoning prevention knowledge
6. Special Projects (time permitting) to include new mother outreach and parent-developed lead poisoning prevention education material
7. Medical provider education to VB/I-70 area clinics, DHHA providers, and VB/I-70 providers
8. Basic program summary reporting for biomonitoring and canvassing; lead data and mapping support contracted to Denver Health and Hospital Authority (DHHA)
9. Interior lead-based paint mini-investigations (limited number); tasks contracted to Northeast Denver Housing Center
10. Monthly community meetings

**APPLICATION FOR  
FEDERAL ASSISTANCE**

Version 7/03

<b>1. TYPE OF SUBMISSION:</b> Application <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		<b>2. DATE SUBMITTED</b> July 18, 2006		Applicant Identifier	
		<b>3. DATE RECEIVED BY STATE</b>		State Application Identifier	
<b>Pre-application</b> <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		<b>4. DATE RECEIVED BY FEDERAL AGENCY</b>		Federal Identifier	

**5. APPLICANT INFORMATION**

<b>Legal Name:</b> City and County of Denver		<b>Organizational Unit:</b> Department: Environmental Health	
<b>Organizational DUNS:</b> 14-545-4687		<b>Division:</b> Environmental Quality	
<b>Address:</b> <b>Street:</b> 201 W. Colfax Avenue, Dept. 1009		<b>Name and telephone number of person to be contacted on matters involving this application (give area code)</b> <b>Prefix:</b> Ms. <b>First Name:</b> Celia	
<b>City:</b> Denver		<b>Middle Name</b>	
<b>County:</b> Denver		<b>Last Name</b> VanDerLoop	
<b>State:</b> Colorado	<b>Zip Code</b> 80202	<b>Suffix:</b>	
<b>Country:</b> USA		<b>Email:</b> celia.vanderloop@ci.denver.co.us	

<b>6. EMPLOYER IDENTIFICATION NUMBER (EIN):</b> 84-6000580		<b>Phone Number (give area code)</b> 720-865-5452	<b>Fax Number (give area code)</b> 720-865-5534
---	--	--	--

<b>8. TYPE OF APPLICATION:</b> <input type="checkbox"/> New <input checked="" type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.)		<b>7. TYPE OF APPLICANT: (See back of form for Application Types)</b> County/Municipal Government Other (specify)	
Other (specify)		<b>9. NAME OF FEDERAL AGENCY:</b> Environmental Protection Agency	

<b>10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:</b> TITLE (Name of Program): Superfund Remedial Action 66-802		<b>11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:</b> VB/I-70 Superfund Site Community Health Plan - Phase II, Year 3	
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<b>12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):</b> City and County of Denver		<b>14. CONGRESSIONAL DISTRICTS OF:</b> a. Applicant Colorado 1 b. Project Colorado 1	
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<b>13. PROPOSED PROJECT</b> Start Date: October 1, 2006 Ending Date: October 31, 2007		<b>16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?</b> a. Yes. <input type="checkbox"/> THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE: b. No. <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E. O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW	
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<b>15. ESTIMATED FUNDING:</b>		<b>17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?</b> <input type="checkbox"/> Yes If "Yes" attach an explanation. <input checked="" type="checkbox"/> No	
a. Federal	\$ 337,835.00		
b. Applicant	\$ .00		
c. State	\$ .00		
d. Local	\$ .00		
e. Other	\$ .00		
f. Program Income	\$ .00		
g. TOTAL	\$ 337,835.00		

**18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.**

<b>a. Authorized Representative</b>		
Prefix Ms	First Name Nancy	Middle Name
Last Name Severson		Suffix
b. Title Manager, Department of Environmental Health, City and County of Denver		c. Telephone Number (give area code) 720-865-5483
d. Signature of Authorized Representative		e. Date Signed 7/18/06

# BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

## SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		\$	\$	337,835.00	\$	337,835.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		\$ 0.00	\$ 0.00	\$ 337,835.00	\$ 0.00	\$ 337,835.00

## SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
a. Personnel	\$	\$	141,156.00	\$	141,156.00
b. Fringe Benefits			32,466.00		32,466.00
c. Travel			6,200.00		6,200.00
d. Equipment			0.00		0.00
e. Supplies			42,380.00		42,380.00
f. Contractual			92,010.00		92,010.00
g. Construction			0.00		0.00
h. Other			0.00		0.00
i. Total Direct Charges (sum of 6a-6h)	0.00	0.00	314,212.00	0.00	314,212.00
j. Indirect Charges			23,623.00		23,623.00
k. TOTALS (sum of 6i and 6j)	\$ 0.00	\$ 0.00	\$ 337,835.00	\$ 0.00	\$ 337,835.00
7. Program Income	\$	\$	\$	\$	0.00

Authorized for Local Reproduction

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	\$	\$	\$	\$ 0.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL (sum of lines 8-11)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 0.00	\$	\$	\$	\$
14. Non-Federal	0.00				
15. TOTAL (sum of lines 13 and 14)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16.	\$	\$	\$	\$
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges:
23. Remarks:	



## OBJECT CLASS CATEGORIES DETAIL BREAKDOWN

[Note: Please indicate any pre-award costs with a star (\*)]

[Federal share plus \*\*Match share]

### a. PERSONNEL

Position - Recipient Staff Only	Estimated Hour (FTEs)	Salary (Annual Rate)	Amount
VB/I-70 CHP Administrator	.48	\$55,871	\$26,818
VB/I-70 CHP Coordinator	.57	\$46,869	\$26,715
Agency Support Technician	1.0	\$37,440	\$37,440
IT Developer	.10	\$56,689	\$5,669
Intern - general	1.0	\$33,280	\$33,280
Administrative Assistants	0.25	\$44,937	\$11,234
<b>Total Personnel Cost</b>			<b>\$141,156</b>

### b. Fringe Benefits

Base	\$141,156
Rate	X 0.23
<b>Total Fringe Benefits Cost</b>	<b>\$32,466</b>

### c. Travel

#### In-State

Purpose	Destination	No. Days	No. Staff	Miles	Rate	Cost
n/a						0.00

#### Out-State

Purpose	Destination	No. Staff	No. Days	Per Diem	Lodging	Cost
Attend 2006 APHA	Boston	2	4			\$3,200
NYCOSH review visit	New York, NY	2	4			\$3,000
<b>Total Travel Cost</b>						<b>\$6,200</b>

Revised: 11/04

**d. Capital Equipment (Cost of \$5,000 or more, useful life of 1 year or more)**

Item – Purchase	Number	Cost Per Unit	Total
n/a			0.00
Item – Lease			
n/a			0.00
<b>Total Equipment Cost</b>			<b>0.00</b>

**e. Supplies**

List supplies by groups (Office, Laboratory, etc.)	Cost
Training Fees	\$9,815
Training Supplies, Safety Supplies, Field Supplies	\$8,465
Printing and Mailing	\$11,600
Office Supplies	\$6000
Special Project Supplies	\$6,500
<b>Total Supplies Cost</b>	<b>\$42,380</b>

**f. Contractual**

List each planned contract or type of service to be procured.			Cost
Qwest			\$1300
Nextel			\$2400
Community Small Grants and Community Funds			\$2750
Consultants	Hourly Rate	Daily Rate	
Community Health Worker	16.00		\$54,360
Community Health Worker – construction	15.00		\$31,200
f. Total Contractual Cost			\$92,010

**g. Other (Operating)**

Items	Cost
n/a	0.00

g. Other – In-Kind    Sample  
 Volunteers            \$12 hr. Engineer    \$12/hr. @\$120    BIA    \$1,440  
 Donated Space        \$550/mon            12 mons @\$550/mon    Owned by Tribe    \$6,660

Item/Service	Market Value	Use Calculations	Source	Total
n/a				0.00
Total In-Kind				0.00
Total Other				0.00

h. Total Direct Cost (a through g) (Include Match Funds)	\$314,212
i. Indirect Cost: (Rate: 0.075 %)	\$23,623
j. Total Proposed Costs:	\$337,835
Federal Percentage: <u>100</u> % Recipient Percentage: _____ %	



# CITY AND COUNTY OF DENVER

## DEPARTMENT OF ENVIRONMENTAL HEALTH

Nancy J. Severson, Manager

JOHN W. HICKENLOOPER  
Mayor

Division of Environmental Quality  
201 W Colfax Ave Dept 1009  
Denver, CO 80202  
PHONE: (720) 865-5452  
FAX: (720) 865-5534  
[www.denvergov.org/DEH](http://www.denvergov.org/DEH)

August 15, 2005

Victor Ketellapper, P.E.  
Project Manager  
U.S. Environmental Protection Agency – Region VIII  
Superfund Program  
999 18th St., Suite 300  
Denver, Colorado 80202-2466

2005 AUG 18 PM 2:24  
EPA REGION VIII  
SUPERFUND BRANCH

Dear Mr. Ketellapper:

The second quarter 2005 financial summary for the VB/I-70 Community Health Program is appended. Please contact me if you have any questions or require more detailed information.

Sincerely,

Martha F. Hoff, CIH, CSP  
VB/I-70 Community Health Program Administrator

Enclosure (1)

cc – via email only:

Celia VanDerLoop – City and County of Denver, Department of Environmental Health  
Bill Benerman – City and County of Denver, Department of Environmental Health  
Jason Salas – City and County of Denver, Department of Environmental Health

**Vasquez Boulevard/I-70 Community Health and Education and Outreach Plan**  
**Report Date 08/15/2005**  
**FYTD 06/30/2005**  
**Program Fiscal Year 07/01/2004 to 09/30/2004**  
**Total Grant Award – \$443,000**

**Budget Summary – Costs Billed Through 06/30/2005**

<b>Budget Period</b>	<b>Staffing<sup>1,a</sup></b>	<b>Contract<sup>2,a</sup></b>	<b>Supplies/ Materials<sup>a</sup></b>	<b>Total Period Expenses<sup>a</sup></b>	<b>Balance</b>
04/01/2005 – 06/30/2005	\$25,866.07	\$23,466.00	\$997.07	\$50,329.14	\$329,591.97
01/01/2005 – 03/31/2005	\$25,683.12	\$4,185.25	\$1,841.20	\$31,709.57	\$379,921.11
12/01/2004 – 12/31/2004	\$8,465.51	0	\$115.04	\$8,580.55	\$411,630.68
11/01/2004 – 11/30/2004	\$8,368.77	0	0	\$8,368.77	\$420,211.23
10/01/2004 – 10/31/2004	\$5,247.00	0	0	\$5,247.00	\$428,580.00
07/01/2004 – 09/30/2005	\$9,173.00	0	0	\$9,173.00	\$433,827.00

**Contract-Base Cost Summary**

<b>Contractor<sup>2</sup></b>	<b>Allocation</b>	<b>Budget Period Expense</b>	<b>Balance Remaining</b>
DHHA – Data/Case Management	\$102,588	\$0 <sup>a</sup>	\$102,588
DHHA – Laboratory Analyses	\$39,000	\$0 <sup>a</sup>	\$39,000
NDHC – Home Investigations	\$41,000	\$0	\$41,000
Community Organizations	\$15,000	\$0 <sup>a</sup>	\$15,000
Community Health Workers and related services	\$84,840	\$23,466.00	\$57,188.75
Student Health Workers	\$1,632	\$0	\$1,632

**Materials-Base Cost Summary**

<b>Supplies/Materials</b>	<b>Allocation</b>	<b>Budget Period Expense</b>	<b>Balance Remaining</b>
Copies/materials/equipment/miscellaneous	\$15,000	\$997.07 <sup>a</sup>	\$12,046.69

<sup>1</sup>DEH personnel

<sup>2</sup>Independent Contractors/Services tp DEH

<sup>a</sup>Some costs incurred – not yet billed



JOHN W. HICKENLOOPER  
Mayor

# CITY AND COUNTY OF DENVER

## DEPARTMENT OF ENVIRONMENTAL HEALTH

Nancy J. Severson, Manager

201 W. Colfax, Dept. 1009  
Denver, CO. 80202

PHONE: (720) 865-5365

FAX: (720) 865-5531

[www.denvergov.org/health-environment](http://www.denvergov.org/health-environment)

June 22, 2005

Olive Hofstader  
8TMS-G  
U.S. Environmental Protection Agency  
999 18<sup>th</sup> Street  
Denver, CO 80202

Re: VB/I-70 Superfund Site Phase II—Community Health Plan

Dear Ms. Hofstader:

Enclosed please find completed forms SF 424 and SF 424a, for the agreed upon EPA grant to the Department of Environmental Health (DEH) to enable a second year of implementation of the community health plan (CHP) for the VB/I-70 Superfund Site previously developed under the Phase I grant.

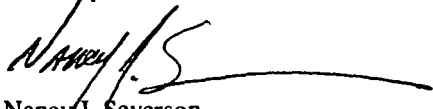
Consistent with DEH staff discussions with you and the other project participants, with whom you will be separately contracting, the Cooperative Agreement (CA) enclosed herewith identifies our scope of work, embellished in a Memorandum of Agreement.

As also discussed, from the \$676,652.00 grant award, DEH will be passing \$41,000.00 to the Northeast Denver Housing Center (NDHC) for home lead investigation work and \$141,588.00 to the Denver Health & Hospitals Authority (DHHA) for their work, also separately identified in the CA (and MOA). All other activity set forth in the CA will be the responsibility of the respective identified agencies. Importantly, with the exception of DHHA and NDHC (who work under our management), whenever completion of our grant work is dependent on the obligations of others, including EPA, we trust you will exercise your grant oversight authority to ensure timely completion.

As soon as we receive EPA's grant offer we will initiate the City's approval process. Our grant acceptance rules may require us to arrange for grant funding in annual amounts or call for some restatement of activity for better clarity. We will contact you if necessary.

Please contact Celia VanDerLoop if you have questions. Our staff looks forward to working with all the project participants on this important endeavor. Thank you for supporting our efforts to protect public health.

Sincerely,



Nancy J. Severson  
Manager

cc: Victor Ketellapper – EPA Region XIII

## Community Health Program for VB/I-70 Superfund Site

### Cooperative Agreement

This cooperative agreement between the Denver Department of Environmental Health (DEH) and the U.S. Environmental Protection Agency (EPA) provides for DEH to develop, implement, and manage a community health program (CHP) for residents of the VB/I-70 Superfund site, in Denver, Colorado. This document is not intended to be a detailed work plan, but provides general concepts and approaches to program development and implementation. This agreement is based on current planning for the program as incorporated in a Memorandum of Agreement between EPA, DEH, Denver Health and Hospital Authority (DHHA), the Colorado Department of Public Health and Environmental (CDPHE), the Agency for Toxic Substances and Disease Registry (ATSDR) as well as concepts presented in the Community Health Program Design Work Plan, March 2003. As a part of this Cooperative Agreement, DEH is responsible for completion of tasks assigned through the MOA to DEH and to DHHA. DEH is not responsible for the performance of CDPHE, ATSDR, EPA, PEHSU, or organizations other than DEH and DHHA.

**Overall Goal:** Develop, implement, and manage a community health program with residents in the VB/I-70 (VB) site to reduce resident exposure to arsenic and lead in soil during the period of soil remediation, to reduce children's exposure to contaminants in soil from soil pica behavior, and to reduce children's exposure to lead from sources other than soil. The CHP will include the following components at a minimum: program management and administration to be provided through DEH; community outreach and education to be provided through DEH and neighborhood residents, as available, independently contracted as community health workers; bio-monitoring to be provided through CDPHE (not included in this cooperative agreement); case management for children identified with elevated levels of arsenic or lead, including environmental investigations and interagency coordination of response activities to be provided by DHHA and DEH; laboratory analysis for blood lead to be provided by DHHA, and data management and reporting to be provided by DEH and DHHA. Tasks and agency roles are spelled out in more detail in the Memorandum of Agreement.

**Expected benefits to the community:** The community health program can provide numerous benefits to this VB community:

- Help prevent exposures before they occur, through education and outreach activities.
- Involve the community in prevention, education, and outreach to utilize community strengths and partnerships and reach community members not normally reached through standard methods.
- Minimize potential exposures to site chemicals of concern (COCs) during the timeframe in which the site remedy is being implemented, but is not yet complete.
- Reduce children's exposure to sources other than soil. Especially for lead, it is well documented that there are multiple potential sources of exposure, including deteriorated lead-based paint, the predominant source of exposure for most children.
- Ensure that community members are appropriately tested (bio-monitored) for exposure to the contaminants of concern.
- Ensure that community members with elevated levels of exposure are provided with appropriate follow-up investigation, referral, and mitigation.
- Ensure that the community becomes an integral component of ensuring that a protective remedy is implemented.
- Identify and provide interventions for children exhibiting pica behavior. Typically, pica children require additional interventions than provided by a simple soil removal program. This is because they are at risk for health effects from contaminants such as lead in soil, even at urban background levels.
- Verification of remedy effectiveness. Data can be evaluated periodically to address community concerns regarding the protectiveness of the remedy.

DEH, with assistance from DHHA and Northeast Denver Housing Center (NDHC), will be responsible for addressing the following components:

- A. **Community Outreach and Education:** Develop and implement bilingual community outreach and education programs. The factors below will be modified based upon community input, as recorded in the Community Outreach and Education planning documents, and may be modified through finalization of the Memorandum of Agreement between the parties. DEH is not responsible for tasks assigned to other agencies through the MOA. Community outreach and education activities will include provision of:



- Information to assist families in preventing, or identifying and treating soil pica behavior in children and pregnant women;
- Education to residents, educators, and social service agencies about possible sources of lead and arsenic hazards;
- Information to identify and prevent exposure to hazardous levels of lead and arsenic, from all sources, especially for young children;
- Outreach to recruit participants into the bio-monitoring program, with its associated follow-up and case management resources;
- Education to residents, educators, and social service agencies about EPA's soil remediation program that will be ongoing in their community;
- Education to health-care providers in the VB area to inform them of ongoing site activities, including the specifics of the bio-monitoring program with a goal of coordinating testing and increasing resident participation; and
- Evaluation and inspection of indoor environments at priority homes to identify lead hazards, with discussion of results and follow-up (NDHC).

**B. Case Management:** Provide effective and comprehensive case management activities to families affected by childhood or in-utero lead poisoning, and to families with children determined to have elevated urinary arsenic levels. The factors below will be modified based upon community and agency input, and may be modified through finalization of the Memorandum of Agreement between the project parties. DEH is not responsible for tasks assigned through the MOA to agencies other than DHHA. Case management activities will include:

- Laboratory analyses and data management;
- Providing and explaining results to the family;
- Referrals for follow-up testing (e.g., need for confirmatory venous blood-lead level);
- Home investigations to determine the source of the exposure;
- Referrals for additional services, such as medical/ social services, home renovation, etc.;
- Coordination with other health agencies, such as the child's health care provider(s) and the Colorado Lead Poisoning Prevention Program

(CLPPP); and

- Coordination with other response agencies to abate potential hazards, such as EPA and NDHC.

C. **Data Management and Reporting:** Develop, implement, and maintain an effective electronic data management system to store, track, and manipulate environmental and biologic data for use in management of the CHP. The data will be used in investigating, managing cases responding to inquiries, and reporting of results. Confidentiality of medical data will be maintained at all times. The factors below will be modified based upon community and agency input, and may be modified through finalization of the Memorandum of Agreement between the parties. DEH is not responsible for tasks assigned through the MOA to agencies other than DHHA. The data will include:

- Environmental sampling results for individual properties from EPA sampling;
- Environmental sampling results for individual properties from case investigations;
- Biological results obtained during the bio-monitoring program (medically confidential);
- Biological results obtained from other sources (e.g., healthcare provider, CLPPP), for use in case management (medically confidential); and
- Response actions required or taken at an individual property.

**Program Management, Administration, and Staff:** DEH will have overall responsibility for management and implementation of the CHP. The factors below will be modified based upon community and agency input, and may be modified through finalization of the Memorandum of Agreement between the parties. DEH is not responsible for tasks assigned through the MOA to agencies other than DHHA. These responsibilities include:

- Coordinating, tracking, and documenting completion of program activities;
- Coordinating and documenting program meetings;
- Coordinating and scheduling work by subcontractors;

- Coordination and communication with participating community groups;
- Coordination and communication with participating agencies;
- Reporting bio-monitoring results to CDPHE and CLPPP and to EPA (as appropriate);
- Contracting and scheduling for laboratory analysis in support of the bio-monitoring and environmental investigation programs;
- Conducting environmental investigations;
- Coordinating response actions, and reporting results to NDHC and the EPA soil remediation program;
- Maintaining program records;
- Program evaluation; and
- Reporting to the EPA project manager.

# APPLICATION FOR FEDERAL ASSISTANCE

1. TYPE OF SUBMISSION: Application		2. DATE SUBMITTED June 29, 2005	Applicant Identifier	
<input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		3. DATE RECEIVED BY STATE	State Application Identifier	
<input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier	
5. APPLICANT INFORMATION				
Legal Name: City & County of Denver		Organizational Unit: Department: Environmental Health Department		
Organizational DUNS: 14-545-4687		Division: Environmental Quality Division		
Address: 201 W. Colfax Ave Dept 1009		Name and telephone number of person to be contacted on matters involving this application (give area code)		
Street:		Prefix: Ms.	First Name: Celia	
City: Denver		Middle Name:		
County: Denver		Last Name: VanDerLoop		
State: Colorado	Zip Code: 80202	Suffix:		
County: U.S.A.		Email: Celia.VanDerLoop@ci.denver.co.us		
6. EMPLOYER IDENTIFICATION NUMBER (EIN): 84-6008580		Phone Number (give area code) 720-865-5452		Fax Number (give area code) 720-865-5534
8. TYPE OF APPLICATION: <input type="checkbox"/> New <input checked="" type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.)  <input type="checkbox"/> <input type="checkbox"/> Other (specify)		7. TYPE OF APPLICANT: (See back of form for Application Types)  County/municipal government  Other (specify)		
10 CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:  66-802		9. NAME OF FEDERAL AGENCY: Environmental Protection Agency		
TITLE (Name of Program): Superfund Remedial Action		11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:  VB/1-70 Superfund Site Community Health Plan--Phase II, Year 2		
12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc): City & County of Denver		14. CONGRESSIONAL DISTRICTS OF: a. Applicant Colorado 1 b. Project Colorado 1		
13. PROPOSED PROJECT Start Date: October 1, 2005 Ending Date: December 31, 2006		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS? a. Yes <input type="checkbox"/> THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE: b. No <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E. O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW		
15. ESTIMATED FUNDING: a. Federal \$ 676,652.00 b. Applicant \$ c. State \$ d. Local \$ e. Other \$ f. Program Income \$ g. TOTAL \$ 676,652.00				
18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.				
a. Authorized Representative				
Prefix Ms.	First Name Nancy		Middle Name	
Last Name Sevenson		Suffix		
b. Title Manager, Department of Environmental Health		c. Telephone Number (give area code) 720-865-5483		
d. Signature of Authorized Representative		e. Date Signed		

# BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

## SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Comm. Health Plan	66-802 Superfund	\$	\$	\$ 676,652.00	\$	\$ 676,652.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		\$ 0.00	\$ 0.00	\$ 676,652.00	\$	\$ 676,652.00

## SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total
	(1)	(2)	(3)	(4)	(5)
a. Personnel	\$	\$	\$ 197,874.00	\$	\$ 198,874.00
b. Fringe Benefits			43,436.00		43,436.00
c. Travel			6,000.00		6,000.00
d. Equipment					0.00
e. Supplies			38,665.00		38,665.00
f. Contractual			390,677.00		390,677.00
g. Construction					0.00
h. Other					
i. Total Direct Charges (sum of 6a-6h)			676,652.00		676,652.00
j. Indirect Charges			0.00		0.00
k. TOTALS (sum of 6i and 6j)	\$	\$	\$ 676,652.00	\$	\$ 676,652.00
7. Program Income	\$	\$	\$	\$	\$ 0.00

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Prescribed by OMB Circular A-102

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	\$	\$	\$	\$ 0.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL (sum of lines 8-11)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 0.00	\$	\$	\$	\$
14. Non-Federal	0.00				
15. TOTAL (sum of lines 13 and 14)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. Comm. Health Plan--Phase II, Yr. 2; Superfund 66-802	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges:
23. Remarks:	



JOHN W. HICKEN COOPER  
Mayor

# CITY AND COUNTY OF DENVER

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Nancy J. Severson, Manager

201 W. Colfax, Dept. 1009  
Denver, CO. 80202  
PHONE: (720) 865-5365  
FAX: (720) 865-5531  
[www.denvergov.org/health-environment](http://www.denvergov.org/health-environment)

*Olive Hofstadter  
6467*

June 17, 2005

Victor Kettelapper  
U.S. Environmental Protection Agency  
999 18<sup>th</sup> Street  
Denver, CO 80202

Re: VB/I-70 Superfund Site Phase II—Community Health Plan

Dear Mr. Kettelapper:

Enclosed please find completed forms SF 424 and SF 424a, for the agreed upon EPA grant to the Department of Environmental Health (DEH) to enable a second year of implementation of the community health plan (CHP) for the VB/I-70 Superfund Site previously developed under the Phase I grant.


Consistent with DEH staff discussions with you and the other project participants, with whom you will be separately contracting, the Cooperative Agreement (CA) enclosed herewith identifies our scope of work, embellished in a Memorandum of Agreement.

As also discussed, from the \$676,652.00 grant award, DEH will be passing \$41,000.00 to the Northeast Denver Housing Center (NDHC) for home lead investigation work and \$141,588.00 to the Denver Health & Hospitals Authority (DHHA) for their work, also separately identified in the CA (and MOA). All other activity set forth in the CA will be the responsibility of the respective identified agencies. Importantly, with the exception of DHHA and NDHC (who work under our management), whenever completion of our grant work is dependent on the obligations of others, including EPA, we trust you will exercise your grant oversight authority to ensure timely completion.

As soon as we receive EPA's grant offer we will initiate the City's approval process. Our grant acceptance rules may require us to arrange for grant funding in annual amounts or call for some restatement of activity for better clarity. We will contact you if necessary.

Please contact Celia VanDerLoop if you have questions. Our staff looks forward to working with all the project participants on this important endeavor. Thank you for supporting our efforts to protect public health.

Sincerely,

  
Nancy J. Severson  
Manager

## Community Health Program for VB/I-70 Superfund Site

### Cooperative Agreement

This cooperative agreement between the Denver Department of Environmental Health (DEH) and the U.S. Environmental Protection Agency (EPA) provides for DEH to develop, implement, and manage a community health program (CHP) for residents of the VB/I-70 Superfund site, in Denver, Colorado. This document is not intended to be a detailed work plan, but provides general concepts and approaches to program development and implementation. This agreement is based on current planning for the program as incorporated in a Memorandum of Agreement between EPA, DEH, Denver Health and Hospital Authority (DHHA), the Colorado Department of Public Health and Environmental (CDPHE), the Agency for Toxic Substances and Disease Registry (ATSDR) as well as concepts presented in the Community Health Program Design Work Plan, March 2003. As a part of this Cooperative Agreement, DEH is responsible for completion of tasks assigned through the MOA to DEH and to DHHA. DEH is not responsible for the performance of CDPHE, ATSDR, EPA, PEHSU, or organizations other than DEH and DHHA.

**Overall Goal:** Develop, implement, and manage a community health program with residents in the VB/I-70 (VB) site to reduce resident exposure to arsenic and lead in soil during the period of soil remediation, to reduce children's exposure to contaminants in soil from soil pica behavior, and to reduce children's exposure to lead from sources other than soil. The CHP will include the following components at a minimum: program management and administration to be provided through DEH; community outreach and education to be provided through DEH and neighborhood residents, as available, independently contracted as community health workers; bio-monitoring to be provided through CDPHE (not included in this cooperative agreement); case management for children identified with elevated levels of arsenic or lead, including environmental investigations and interagency coordination of response activities to be provided by DHHA and DEH; laboratory analysis for blood lead to be provided by DHHA, and data management and reporting to be provided by DEH and DHHA. Tasks and agency roles are spelled out in more detail in the Memorandum of Agreement.





**Expected benefits to the community:** The community health program can provide numerous benefits to this VB community:

- Help prevent exposures before they occur, through education and outreach activities.
- Involve the community in prevention, education, and outreach to utilize community strengths and partnerships and reach community members not normally reached through standard methods.
- Minimize potential exposures to site chemicals of concern (COCs) during the timeframe in which the site remedy is being implemented, but is not yet complete.
- Reduce children's exposure to sources other than soil. Especially for lead, it is well documented that there are multiple potential sources of exposure, including deteriorated lead-based paint, the predominant source of exposure for most children.
- Ensure that community members are appropriately tested (bio-monitored) for exposure to the contaminants of concern.
- Ensure that community members with elevated levels of exposure are provided with appropriate follow-up investigation, referral, and mitigation.
- Ensure that the community becomes an integral component of ensuring that a protective remedy is implemented.
- Identify and provide interventions for children exhibiting pica behavior. Typically, pica children require additional interventions than provided by a simple soil removal program. This is because they are at risk for health effects from contaminants such as lead in soil, even at urban background levels.
- Verification of remedy effectiveness. Data can be evaluated periodically to address community concerns regarding the protectiveness of the remedy.

DEH, with assistance from DHHA and Northeast Denver Housing Center (NDHC), will be responsible for addressing the following components:

**A. Community Outreach and Education:** Develop and implement bilingual community outreach and education programs. The factors below will be modified based upon community input, as recorded in the Community Outreach and Education planning documents, and may be modified through finalization of the Memorandum of Agreement between the parties. DEH is not responsible for tasks assigned to other agencies through the MOA. Community outreach and education activities will include provision of:

- Information to assist families in preventing, or identifying and treating soil pica behavior in children and pregnant women;
- Education to residents, educators, and social service agencies about possible sources of lead and arsenic hazards;
- Information to identify and prevent exposure to hazardous levels of lead and arsenic, from all sources, especially for young children;
- Outreach to recruit participants into the bio-monitoring program, with its associated follow-up and case management resources;
- Education to residents, educators, and social service agencies about EPA's soil remediation program that will be ongoing in their community;
- Education to health-care providers in the VB area to inform them of ongoing site activities, including the specifics of the bio-monitoring program with a goal of coordinating testing and increasing resident participation
- Evaluation and inspection of indoor environments at priority homes to identify lead hazards, with discussion of results and follow-up (NDHC).

**B. Case Management:** Provide effective and comprehensive case management activities to families affected by childhood or in-utero lead poisoning, and to families with children determined to have elevated urinary arsenic levels. The factors below will be modified based upon community and agency input, and may be modified through finalization of the Memorandum of Agreement between the project parties. DEH is not responsible for tasks assigned through the MOA to agencies other than DHHA. Case management activities will include:

- Laboratory analyses and data management;
- Providing and explaining results to the family;

- Referrals for follow-up testing (e.g., need for confirmatory venous blood-lead level);
- Home investigations to determine the source of the exposure;
- Referrals for additional services, such as medical/ social services, home renovation, etc
- Coordination with other health agencies, such as the child's health care provider(s) and the Colorado Lead Poisoning Prevention Program (CLPPP)
- Coordination with other response agencies to abate potential hazards, such as EPA and NDHC.

**C. Data Management and Reporting:** Develop, implement, and maintain an effective electronic data management system to store, track, and manipulate environmental and biologic data for use in management of the CHP. The data will be used in investigating, managing cases responding to inquiries, and reporting of results. Confidentiality of medical data will be maintained at all times. The factors below will be modified based upon community and agency input, and may be modified through finalization of the Memorandum of Agreement between the parties. DEH is not responsible for tasks assigned through the MOA to agencies other than DHHA. The data will include:

- Environmental sampling results for individual properties from EPA sampling;
- Environmental sampling results for individual properties from case investigations;
- Biological results obtained during the bio-monitoring program (medically confidential);
- Biological results obtained from other sources (e.g., healthcare provider, CLPPP), for use in case management (medically confidential);
- Response actions required or taken at an individual property.

**Program Management, Administration, and Staff:** DEH will have overall responsibility for management and implementation of the CHP. The factors below will be modified based upon community and agency input, and may be modified through finalization of the Memorandum of Agreement between the parties. DEH is not responsible for tasks assigned through the MOA to agencies other than DHHA. These responsibilities include:

- Coordinating, tracking, and documenting completion of program activities;
- Coordinating and documenting program meetings;
- Coordinating and scheduling work by subcontractors;
- Coordination and communication with participating community groups;
- Coordination and communication with participating agencies;
- Reporting bio-monitoring results to CDPHE and CLPPP and to EPA (as appropriate);
- Contracting and scheduling for laboratory analysis in support of the bio-monitoring and environmental investigation programs;
- Conducting environmental investigations;
- Coordinating response actions, and reporting results to NDHC and the EPA soil remediation program;
- Maintaining program records;
- Program evaluation; and
- Reporting to the EPA project manager.

# APPLICATION FOR FEDERAL ASSISTANCE

1 TYPE OF SUBMISSION Application		2 DATE SUBMITTED June 29, 2005		Applicant Identifier	
<input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		3. DATE RECEIVED BY STATE		State Application Identifier	
<input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction		4 DATE RECEIVED BY FEDERAL AGENCY		Federal Identifier	
5 APPLICANT INFORMATION					
Legal Name: City & County of Denver			Organizational Unit: Department: Environmental Health Department		
Organizational DUNS 14-545-4687			Division: Environmental Quality Division		
Address: 201 W. Colfax Ave Dept 1009			Name and telephone number of person to be contacted on matters involving this application (give area code)		
Street:			Prefix Ms.		First Name: Celia
City: Denver			Middle Name		
County: Denver			Last Name: VanDerLoop		
State: Colorado		Zip Code: 80202		Suffix:	
County: U.S.A.			Email: Celia.VanDerLoop@ci.Denver.co.us		
6 EMPLOYER IDENTIFICATION NUMBER (EIN): 84-6000580			Phone Number (give area code) 720-865-5452		Fax Number (give area code) 720-865-5534
8 TYPE OF APPLICATION <input type="checkbox"/> New <input checked="" type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters) <div style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> </div> Other (specify)			7 TYPE OF APPLICANT (See back of form for Application Types) County/municipal government Other (specify)		
10 CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 66-802			9. NAME OF FEDERAL AGENCY: Environmental Protection Agency		
TITLE (Name of Program) Superfund Remedial Action			11 DESCRIPTIVE TITLE OF APPLICANT'S PROJECT VB/1-70 Superfund Site Community Health Plan--Phase II, Year 2		
12. AREAS AFFECTED BY PROJECT (City, County, State, etc.) City & County of Denver			14. CONGRESSIONAL DISTRICTS OF: a. Applicant Colorado 1 b. Project Colorado 1		
13. PROPOSED PROJECT Start Date: October 1, 2005 Ending Date: September 30, 2006			16 IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS? a. Yes <input type="checkbox"/> THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE. h. No <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW		
15 ESTIMATED FUNDING: a. Federal \$ 676,652.09 b. Applicant \$ c. State \$ d. Local \$ e. Other \$ f. Program Income \$ g. TOTAL \$ 676,652.00					
18 TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.					
a. Authorized Representative					
Prefix Ms.		First Name Nancy		Middle Name	
Last Name Saverson				Suffix	
b. Title Manager, Department of Environmental Health		f. Telephone Number (give area code) 720-865-5483			
d. Signature of Authorized Representative		c. Date Signed			

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**SECTION C - NON-FEDERAL RESOURCES**

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	\$	\$	\$	\$ 0.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL (sum of lines 8-11)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

**SECTION D - FORECASTED CASH NEEDS**

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 0.00	\$	\$	\$	\$
14. Non-Federal	0.00				
15. TOTAL (sum of lines 13 and 14)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

**SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT**

(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. Comm. Health Plan--Phase II, Yr. 2; Superfund 66-802	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00	\$ 169,163.00

**SECTION F - OTHER BUDGET INFORMATION**

21. Direct Charges:	22. Indirect Charges:
23. Remarks:	

# BUDGET INFORMATION - Non-Construction Programs

OMB Report No. 0704-0188

## SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Comm. Health Plan	66-802 Superfund	\$	\$	\$ 676,652.00	\$	\$ 676,652.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		\$ 0.00	\$ 0.00	\$ 676,652.00	\$	\$ 676,652.00

## SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
a. Personnel	\$	\$	\$ 197,874.00	\$	\$ 198,874.00
b. Fringe Benefits			43,436.00		43,436.00
c. Travel			6,000.00		6,000.00
d. Equipment					0.00
e. Supplies			38,665.00		38,665.00
f. Contractual			390,677.00		390,677.00
g. Construction					0.00
h. Other					
i. Total Direct Charges (sum of 6a-6h)			676,652.00		676,652.00
j. Indirect Charges			0.00		0.00
k. TOTALS (sum of 6i and 6j)	\$	\$	\$ 676,652.00	\$	\$ 676,652.00
7. Program Income	\$	\$	\$	\$	\$ 0.00

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Prescribed by OMB Circular A-102





"Hoff, Martha F -  
Environmental Health"  
<Martha.Hoff@ci.denver.co.us>

04/12/2005 12:29 PM

"Benerman, Bill - Environmental Health"  
<Bill.Benerman@ci.denver.co.us>, "Hook, Gene C. -  
Environmental Health" <Gene.Hook@ci.denver.co.us>,  
Jennifer Chergo/OCP/R8/USEPA/US@EPA, Victor  
Ketellapper/EPR/R8/USEPA/US@EPA, Patricia  
Courtney/OCP/R8/USEPA/US@EPA, "Salas, Jason S -  
Environmental Health" <Jason.Salas@ci.denver.co.us>,  
"Tafoya-Dominguez, Beverly - Environmental Health"  
To <Beverly.Tafoya-Dominguez@ci.denver.co.us>,  
"Vanderloop, Celia - Environmental Health"  
<Celia.Vanderloop@ci.denver.co.us>, Chris  
Poulet/RA/R8/USEPA/US@EPA,  
cpigford@nedenverhousing.org, Jane.Mitchell@state.co.us,  
Mark.Anderson@dhha.org, Mishelle.Macias@state.co.us,  
Patricia.Miles@dhha.org,  
whawthorne@nedenverhousing.org

cc

bcc

Subject Community Partnership Update

As many of you know, DEH, CDPHE, and EPA met with community leaders last Thursday, April 8<sup>th</sup>, to develop a mechanism for renewing partnership with the community. The following was agreed upon:

1. Monthly meetings will be held and meetings sites rotated through the communities for the "Community Health Program group". This meeting will focus on CHP development, as well as the day-to-day aspects of running the CHP. There will also be mid monthly conference calls (set-up by EPA) so that four weeks do not elapse for issues requiring a quicker timetable. The meetings and conference calls may increase or decrease in frequency after the process hits its stride. Currently, a conference call is slated for April 21<sup>st</sup> at 10:00 AM; the next CHP group meeting will be May 12<sup>th</sup>, location to be announced.
2. Several community members from the CHP group (above) will meet with DEH staff weekly, on Fridays, at 11:00 AM. This will constitute the Outreach Development group that will work together to develop or modify CHP educational messages, outreach materials, and community communications (e.g. soliciting potential biomonitoring clinic sites). This meeting will be at the Curtis Park Community Center – 2980 Curtis Street.
3. The weekly Friday 12:30 PM Community Health Worker meeting/training is open to all community members and many of the community members participating in the Outreach Development Group will stay to attend as these meetings, as they are back-to-back in the same location.
4. The Steering Committee will continue to meet in the Webb building. I will provide increased communication to the community (via email and snail-mail) regarding the SC activities. Approximately a week before the SC meeting, I will solicit agenda items from the community. I will send a steering committee meeting reminder email. Some community members would like to present their input in the form of questions and answers (via email or phone) to the SC. These will be on the agenda as well. I will ensure that the SC's answers are returned to the community. SC agendas, notes, and group communications will continue to be sent via email to the community, as they have been.

If you have any questions, feel free to call me. Thanks Martha

Martha F. Hoff, CIH, CSP  
VB/I-70 Community Health Program Administrator  
Department of Environmental Health

City and County of Denver  
201 W. Colfax Avenue Dept. 109  
Denver, Colorado 80202  
martha.hoff@ci.denver.co  
720-913-1516



# CITY AND COUNTY OF DENVER

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Nancy J. Severson, Manager

Division of Environmental Quality  
201 W Colfax Ave Dept 1009  
Denver, CO 80202  
PHONE: (720) 865-5452  
FAX: (720) 865-5534  
[www.denvergov.org/DEH](http://www.denvergov.org/DEH)

JOHN W. HICKENLOOPER  
Mayor

April 11, 2005

Victor Ketellapper, P.E.  
Project Manager  
U.S. Environmental Protection Agency – Region VIII  
Superfund Program  
999 18th St., Suite 300  
Denver, Colorado 80202-2466

Dear Mr. Ketellapper:

The March (2005) monthly status report for the VB/I-70 Community Health Program is appended. As always, please feel free to contact me if you have any questions or would like to modify the content, format, or distribution of future reports.

Sincerely,

Mardha F. Hoff, CIH, CSP  
VB/I-70 Community Health Program Administrator

Enclosure (1)

cc:

Lorraine Granado – Cross Community Coalition  
Beverly Lumumba, Ph.D. – Clayton Neighborhood Association  
Michael Maes – Swansea Neighborhood  
Gloria A. Shearer – Cole Neighborhood Association  
Akwe Starnes – Whittier Neighborhood Association  
Anthony Thomas – Civic Association of Clayton  
Jim Weaver – Cole Neighborhood Association  
Raquel Holquin – CEASE  
Joan Hooker – Clayton Neighborhood Association

(via email only):

Sandy Douglas – Cole Neighborhood Association  
Celia VanDerLoop – City and County of Denver, Department of Environmental Health  
Bill Benerman – City and County of Denver, Department of Environmental Health  
Gene Hook – City and County of Denver, Department of Environmental Health  
Jason Salas – City and County of Denver, Department of Environmental Health  
Beverly Tafoya-Dominguez – City and County of Denver, Department of Environmental  
Health  
Jennifer Chergo – U.S. Environmental Protection Agency, Region VIII  
Patricia Courtney – U.S. Environmental Protection Agency, Region VIII  
Jane Mitchell – Colorado Department of Public Health and Environment  
Mishelle Macias – Colorado Department of Public Health and Environment  
Wendy Hawthorne – Northeast Denver Housing Center  
Clementine Pigford – Northeast Denver Housing Center  
Paul Melinkovich, M.D. – Denver Health and Hospital Authority  
Mark Anderson, M.D. – Denver Health and Hospital Authority/PEHSU  
Chris Poulet – Agency for Toxic Substances and Disease Registry  
George Weber – George Weber Inc. Environmental

**Vasquez Boulevard/I-70 Community Health Education and Outreach Plan  
Community Health Program Update – March 2005**

<b>Program Area</b>	<b>March Tasks/Activities</b>	<b>April Tasks/Activities</b>	<b>Future Tasks/Activities</b>
<b>Health Education And Community Outreach</b>	<p><b>Health Education</b></p> <p><b>Community Health Workers</b></p> <ul style="list-style-type: none"> <li>➤ Continued canvassing activities.</li> <li>➤ <b>Attended EPA Working Group meeting (3/31/2005).</b></li> <li>➤ Continued to process CBI background checks.</li> <li>➤ Conducted weekly CHW training to continually improve outreach process.</li> </ul> <p><b>Program Development</b></p> <ul style="list-style-type: none"> <li>➤ <b>Obtained laptop and internet access for community office.</b></li> <li>➤ Continued with on-going review and modification of health education outreach materials to reflect phone number and address of community office.</li> <li>➤ <b>Modified in-take, case notes, and invoice forms for greater ease of use and efficiency.</b></li> <li>➤ Stocked outreach health education materials at community office.</li> <li>➤ <b>Established record notebooks for canvassing activities.</b></li> <li>➤ <b>Completed design of CHW badge; provided all CHW's with picture badge, pocket, and lanyard.</b></li> </ul>	<p><b>Health Education</b></p> <p><b>Community Health Workers</b></p> <ul style="list-style-type: none"> <li>➤ Continue canvassing outreach and attend community meetings/events.</li> <li>➤ Complete background investigations.</li> <li>➤ Continue to conduct weekly Friday meetings.</li> </ul> <p><b>Program Development</b></p> <ul style="list-style-type: none"> <li>➤ Purchase fax machine for community office.</li> <li>➤ Finalize cell phone agreement.</li> <li>➤ Develop 2005/2006 program budget.</li> <li>➤ Project canvassing hour needs to meet current program year goals; identify need for additional CHW's and timeframe for hiring.</li> <li>➤ Establish process for making community grant/project funds available to the community.</li> </ul>	<p><b>Health Education</b></p> <p><b>Community Health Workers</b></p> <ul style="list-style-type: none"> <li>➤ <b>Hire additional CHW's so that summer canvassing hours are increased.</b></li> </ul> <p><b>Program Development</b></p> <ul style="list-style-type: none"> <li>➤ Define additional program outreach methods (e.g. school programs, community events, media campaigns).</li> <li>➤ Design format for data presentation (outreach efficacy, contact rates, etc.).</li> <li>➤ Deploy basic media campaign to create community awareness of canvassing, biomonitoring, and CHP activities.</li> </ul>

<u>Program Area</u>	<u>March Tasks/Activities</u>	<u>April Tasks/Activities</u>	<u>Future Tasks/Activities</u>
Health Education And Community Outreach	<ul style="list-style-type: none"> <li>➤ Established electronic filing system for all outreach materials available in electronic format.</li> <li>➤ Established matrix to track CHW individual and program hours; entered all invoice information to date.</li> </ul> <p>Data Management/Evaluation</p> <ul style="list-style-type: none"> <li>➤ Reviewed ATSDR pica workshop findings and other technical material on soil-pica behavior in order to further define soil pica data collection elements.</li> <li>➤ Submitted request to DEH IT for support in development of CHP database.</li> <li>➤ Received IT information from EPA to modify the project database to reflect canvassing progress.</li> </ul> <p>Community Partnership</p> <ul style="list-style-type: none"> <li>➤ Beverly Tafoya-Dominguez continued working with Gloria Shearer to develop and format CHP home-visit contact sheet, CHW badge layout, and door flyer.</li> <li>➤ Sent combined February/March program update letter.</li> <li>➤ Participated in EPA Working Group meeting (3/31/2005).</li> </ul>	<p>Data Management/Evaluation</p> <ul style="list-style-type: none"> <li>➤ Begin development phase of DEH database to track CHW activities and field data.</li> <li>➤ Establish procedure to conduct post-visit evaluation of CHW outreach efforts through resident interviews.</li> <li>➤ Track field contact metrics for evaluation of contact rates, event/meeting attendance, and CHW accountability.</li> </ul> <p>Community Partnership</p> <ul style="list-style-type: none"> <li>➤ Establish partnership mechanism for further development of CHP, as well as day-to-day operations.</li> <li>➤ Establish partnership mechanism so that outreach messages and educational materials can be developed or modified as needed during the life of the program.</li> <li>➤ Partner with community to identify biomonitoring clinic sites and to design media campaign to create</li> </ul>	<p>Data Management/Evaluation</p> <ul style="list-style-type: none"> <li>➤ Design report format for field contact metrics, event/meeting attendance, and CHW accountability.</li> </ul> <p>Community Partnership</p> <ul style="list-style-type: none"> <li>➤ Partner to facilitate obtaining remaining and "difficult" to obtain access agreements.</li> </ul>

<u>Program Area</u>	<u>March Tasks/Activities</u>	<u>April Tasks/Activities</u>	<u>Future Tasks/Activities</u>
<b>Biomonitoring</b>	<b>Biomonitoring Clinics</b> <ul style="list-style-type: none"> <li>➤ Continued to identify potential biomonitoring clinic sites.</li> </ul>	<p>community awareness of canvassing, biomonitoring, and CHP activities.</p> <ul style="list-style-type: none"> <li>➤ Provide increased communication regarding Steering Committee activities, including a question and answer process.</li> </ul> <b>Biomonitoring Clinics</b> <ul style="list-style-type: none"> <li>➤ Continue identifying biomonitoring sites for 2005 biomonitoring clinics.</li> <li>➤ Establish/publish 2005 biomonitoring clinic schedule.</li> <li>➤ Determine budget impact of providing up to four CHW's at each biomonitoring clinic during 2005.</li> </ul>	<b>Biomonitoring Clinics</b> <ul style="list-style-type: none"> <li>➤ Edit outreach flyers to increase map size and modify testing parameters (e.g. ages).</li> </ul>
<b>Case Management</b>	<b>Case Management</b> <ul style="list-style-type: none"> <li>➤ No residents with elevated lead or arsenic identified during 2004 program clinics.</li> </ul>	<b>Case Management</b>	<b>Case Management</b>

**Vasquez Boulevard/I-70 Community Health Education and Outreach Plan  
Steering Committee and Subcommittees Update – March 2005**

Committee/ Subcommittee	March Activities	April Activities	Future Activities
Steering	<ul style="list-style-type: none"> <li>➤ Held committee meeting on 03/23/2005; meeting summary available.</li> <li>➤ DEH→NDHC contract – NDHC insurance information sent to attorney's office.</li> <li>➤ Discussed DPS issues on biomonitoring clinic.</li> <li>➤ Discussed provider education with respect to treatment of pica behavior and ACMT services.</li> <li>➤ DEH initiated review of all agencies' educational materials.</li> <li>➤ Reviewed EPA database issues with respect to canvassing.</li> <li>➤ Continued discussion on biomonitoring clinic needs.</li> <li>➤ Discussed Anthony Thomas' concerns regarding agency/ community partnership in CHP activities.</li> <li>➤ Discussed NDHC contract, scope-of-work, exterior testing, and issues pertaining to HUD-defined sampling protocol.</li> <li>➤ Discussed providing lead testing at well-attended community events, even if arsenic testing cannot be conducted.</li> <li>➤ Discussed Anthony Thomas' concern that residents be notified in EPA's post-remediation letter of the hazards of scraping exterior paint.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Finalize DEH→NDHC contract.</li> <li>➤ Complete content review of all partner agencies educational materials.</li> <li>➤ Circulate final draft of MOA.</li> <li>➤ Begin establishing program measures based upon specifics defined by each subcommittee; draft subcommittee measures due at 04/27/2005 steering committee meeting.</li> <li>➤ Complete identification of non-school sites for 2005 biomonitoring clinics.</li> <li>➤ Meet 04-27-2005.</li> <li>➤ DEH to submit first quarterly measures report.</li> <li>➤ DEH – develop budget for 2005/2006 project year.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Circulate MOA for signature</li> </ul>



Committee/ Subcommittee	March Activities	April Activities	Future Activities
Health Education and Community Outreach	<ul style="list-style-type: none"> <li>➤ Beverly Tafoya-Dominguez and Gloria Shearer (Cole Neighborhood Association) finalized remaining details on ID badge layout, contact sheet, and canvassing introduction sheet.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Incorporate Health Education and Community Outreach subcommittee activities into community partnership mechanism.</li> </ul>	
Biomonitoring	<ul style="list-style-type: none"> <li>➤ Biomonitoring group met on 03/23/2005 to discuss program evaluation.</li> <li>➤ Identified need to establish a process for defining how residents heard about clinics – so that community outreach methods can ultimately be identified.</li> <li>➤ CDPHE continued in the process to fill program staff vacancy.</li> <li>➤ Began revision of program protocols and clinic materials based upon outcome of pilot clinics conducted in 2005.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Continue to define process of using WI State Laboratory of Hygiene samples for QA requirements defined in the QAPP and required by EPA.</li> <li>➤ Continue compilation and review of QC sample result data.</li> <li>➤ Evaluate potential clinic sites as they are identified by the CHP (community and DEH staff).</li> <li>➤ Develop a draft questionnaire to track how residents learned of biomonitoring clinics; CDPHE to provide draft at 4/27/2005 meeting.</li> <li>➤ Continue revision of program protocols and clinic materials.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Work with EPA to finalize reporting format.</li> <li>➤ Establish clinic monitoring schedule after potential sites have been identified, screened, and secured.</li> </ul>
Lead Data/Case Management			<ul style="list-style-type: none"> <li>➤ Identify GIS mapping capabilities to display program data.</li> </ul>
Arsenic Data/Case Management	<ul style="list-style-type: none"> <li>➤ Continued work on database development.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Continue database development.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Develop query and reporting capabilities.</li> </ul>
Medical Management			
Medical Provider Education	<ul style="list-style-type: none"> <li>➤ Received Steering Committee feedback on provider education circular</li> </ul>		<ul style="list-style-type: none"> <li>➤ Disseminate project information to identified providers.</li> </ul>

Copy

**Vasquez Boulevard/I-70 Superfund Site  
Community Health Education and  
Outreach Plan**



**Denver Department of Environmental Health  
August 25, 2004**

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## List of Acronyms

ATSDR	Agency for Toxic Substance and Disease Registry
CHP	Community Health Program
CDPHE	Colorado Department of Public Health and Environment
CEASE	Clayton, Cole, Eiyria, and Swansea Neighborhood Coalition
CHEOP	Community Health Education and Outreach Plan
COPEEN	Colorado People's Environmental and Economic Network
DEH	Denver Department of Environmental Health
DHHA	Denver Health and Hospital Authority
EPA	U.S. Environmental Protection Agency
HCP	Healthy Children's Partnership
HUD	U.S. Department of Housing and Urban Development
KAPHS	Kids at Play Health Study
NDHC	Northeast Denver Housing Center
NPL	National Priorities List
PEHSU	Pediatric Environmental Health Specialty Unit
ROD	Record of Decision
TRI	U.S. EPA Toxic Release Inventory
VB/I-70	Vasquez Boulevard/Interstate 70 (Superfund Site)

## ***Executive Summary***

The VB/I-70 Community Health Program (CHP) is intended to address the risks to children exposed to arsenic in soil from soil pica behavior and children exposed to lead from multiple sources. There will be three components in the Community Health Program: (1) health education; (2) biomonitoring; and (3) response, including investigations and case management for children identified as potentially exposed. The overall program goal of the VB/I-70 Community Health Program is to develop, implement, and manage a community health program, in collaboration with residents, to reduce residents' exposure to arsenic and lead in soil during the period of soil remediation, to reduce children's exposure to contaminants in soil from soil pica behavior, and to reduce children's exposure to lead from sources other than soil. The CHP will include the following components at a minimum:

- (a) community outreach and education,
- (b) biomonitoring,
- (c) case management for children identified with elevated levels of arsenic or lead, including environmental investigations,
- (d) medical management of elevated cases,
- (e) interagency coordination of response activities,
- (f) program management and administration, and
- (g) data management and reporting.

Outcomes to be achieved by the program include:

- a) Development of an infrastructure that allows continued efforts in the community.
- b) Delivery of contacts and outreach information to every community household at least once per year.
- c) Every child in the community will have had at least one opportunity to participate in biomonitoring.
- d) Outreach and education methods will be evaluated for their effectiveness.
- e) Every community person will have the opportunity to attend at least one community meeting per year.
- f) We will have identified what behaviors are causing exposure and will have worked to change behaviors to reduce exposures.

The program plan was developed in collaboration with community members. Community members decided where, when, and how biomonitoring would occur in their respective communities. The primary mechanism for information delivery will be through paid community health workers, or promotoras. Existing community organizations will also be utilized to provide certain outreach activities, such as leafleting neighborhoods, conducting school presentations, or conducting outreach at neighborhood events. Recommended conceptual messages were agreed upon, with existing fact sheets and materials to be utilized after modification to fit the CHP, as needed. Information will be delivered door-to-door, at community events, and at schools. Door-to-door contacts will be made at the times of day when people are expected to be at home; multiple contact attempts will be performed, if necessary. For the health worker contacts, a multi-pathway conversational flowchart was developed to address lead hazards, the need for testing, and ways to prevent exposure.



## **Background on Site**

In 1998, CDPHE requested EPA's assistance in sampling residential yards in the Swansea and Eiyria neighborhoods of Denver. Smelting activities that began in the 1880s were suspected to have potentially increased levels of some metals in area yards. These metals could pose a health risk to people who live in the area. Based on soil sampling results, EPA added the VB/I-70 site to the National Priorities List (NPL). The NPL is a list of contaminated sites that EPA has prioritized for cleanup.

In March 1998, EPA began a large soil sampling effort in the residential yards, schools, and playgrounds in Swansea, Eiyria, and the northern half of the Cole and Clayton neighborhoods. Based on the results of this sampling effort and meetings with community members, EPA expanded the study area to include all of the Swansea/Elyria, Cole, and Clayton neighborhoods, as well as a portion of the Globeville neighborhood. The VB/I-70 site currently includes approximately 4000 residential yards. EPA has sampled more than 3000 of these yards.

Elevated levels of arsenic and lead were found in some of the residential yards throughout these neighborhoods. Levels of both arsenic and lead are lower in gardens than in yard soil. Arsenic and lead levels at area schools and parks are low, and are not of health concern to area children. Arsenic and lead are the metals most likely to be of human health concern in the residential soils in the neighborhoods. So far, EPA's sampling shows yards with elevated arsenic levels occur randomly throughout the entire VB/I-70 site. Some pattern may exist for yards with elevated lead; higher concentrations have been found in the western area of the site.

As part of the final cleanup efforts, EPA will begin another sampling program that again will attempt to gain access to yards not yet sampled to determine whether they need to be cleaned up. As part of the final cleanup, EPA will expand the area to be sampled to include residential yards in a small area from the convergence of Blake Street and Downing Street, south to about 34th Avenue. The soils in this area may have similar elevations of lead as found within the VB/I-70 Site boundaries, based on the pattern for lead observed in the VB/I-70 neighborhoods. In addition to lead, the yards also will be sampled for soil concentrations of arsenic, to be consistent with the VB/I-70 sampling protocol.

In order to assure protection of children in the VB/I-70 site, EPA immediately removed the soil from 48 yards and replaced it with clean soil, as part of initial response activities. The VB/I-70 Record of Decision (ROD) selected a preferred remedy that includes removal of contaminated soils at those homes where arsenic levels exceed 70 parts per million or lead levels exceed 400 parts per million. The selected remedy also includes provision of a Community Health Program (CHP), designed by the community, for the duration of the soil cleanup actions.

### ***Overall Community Health Program Goals***

As stated in the Proposed Plan for the VB/I-70 site, the Community Health Program is intended to address the risks to children exposed to arsenic in soil from soil pica behavior and children exposed to lead from multiple sources. It also will address risks to residents living on soils that are above EPA action levels while they are waiting for an EPA cleanup, and at properties where EPA was denied access to sample. The program will assess risks from any and all potential sources of lead exposure including those that may present a greater risk to children than lead in soil. For arsenic, the program focuses on children with soil pica behavior because the site's soil removal actions are designed to address risks from incidental soil exposure.

There will be three components in the Community Health Program: (1) health education; (2) biomonitoring; and (3) response, including investigations and case management for children identified as potentially exposed. The Community Health Program will be effective in addressing the potential health risks to children with soil pica behavior and the health risks to children exposed to lead from many sources. It will address as many sources of lead as practical. The CHP may also provide a way to evaluate the effectiveness of other site activities.

The Record of Decision describes the required components of the CHP as follows:

"The community Health Program would be composed of two separate (but partially overlapping) elements. The first element would be designed to address risks to area children from non-soil sources of lead, and to the extent that they exist, risks from lead in soils not yet remediated that are above the action level. The second element would be designed to address risks to area children from pica ingestion of arsenic in soil above the preliminary action level of 47 ppm. Participation in one or both elements of the program would be strictly

voluntary, and there would be no charge to eligible residents and property owners for any of the services offered by the community health program... .”

Given the above expectations and input from the community, agreement was reached that the overall program goal of the VB/I-70 Community Health Program is to develop, implement, and manage a community health program, in collaboration with residents, to reduce residents’ exposure to arsenic and lead in soil during the period of soil remediation, to reduce children’s exposure to contaminants in soil from soil pica behavior, and to reduce children’s exposure to lead from sources other than soil. The CHP will include the following components at a minimum:

- / a) community outreach and education,
- b) biomonitoring,
- c) case management for children identified with elevated levels of arsenic or lead, including environmental investigations,
- d) medical management of elevated cases,
- e) interagency coordination of response activities,
- f) program management and administration, and
- g) data management and reporting.

A Community Health Education and Outreach Plan (CHEOP) was needed in order to conduct effective community outreach and education efforts, and to coordinate efficiently with other program components.

### ***Process for Development of the CHEOP***

#### **Community Involvement**

In order to develop and implement the Community Health Program, it was important that community members be actively involved and that a wide variety of viewpoints be represented. It was agreed that:

- (a) DEH would establish the steering committee to address administrative issues and lay groundwork for biomonitoring activities that would commence in 2004.

- (b) Individual community members would decide where, when, and how bio monitoring would occur in their respective communities.
- (c) Individual community members would decide where, when, and how health education would occur in their respective communities.

In order to identify and develop community health education and biomonitoring goals, a number of community involvement mechanisms were employed. From the beginning, the EPA and DEH were asked to make the CHP planning process a community-driven process, and DEH has sought to honor that request. The CHEOP was developed using numerous community meetings in a variety of forums. The meeting agendas, minutes, and other pertinent documents are presented in the appendices to this report (see Appendices A and B for lists of community meetings).

The neighborhoods involved in obtaining Superfund status and then advocating for their communities formed a group called CEASE that has been in place for several years. CEASE represents the Cole, Clayton, Elyria-Swansea, and south Globeville neighborhoods. DEH staff held regular meetings with CEASE representatives, focusing on development of the CHEOP. DEH staff also contacted all of the registered neighborhood organization leaders from neighborhoods included in the ROD, and invited them to send representatives to the meetings. Interested communities nominated representatives from their respective neighborhood organizations to participate in CEASE. The representatives presented the concerns of their neighborhood residents to the group at large, and reported to their neighborhood organizations about the progress of the plan. The CEASE-sponsored community meetings were held twice each month (see Appendix B for a list of meetings and associated materials).

At the suggestion of the CEASE members, an outside facilitator was hired. Focused conversation, consensus workshop and action planning processes were used for obtaining input from the community members. These structured participation methods are inclusive, enable groups to be more responsive to change, and allow for creative decision making. As some of the parties involved in the plan felt more comfortable with traditional facilitation methods, some meetings were organized using more traditional processes, to honor those requests.

Community leaders suggested that some community meetings be held in the evening or as part of a regularly scheduled neighborhood organization meeting to insure that all residents had the

opportunity to participate in developing the CHEOP (see Appendix A for a list of meetings and associated materials). As the CEASE meetings were held during the day, some community members had difficulty attending these meetings yet still wished to provide input. Presentations and requests for input to the CHEOP were made at the evening meetings. The Cole Organizing Alliance Meeting and the Clayton Neighborhood Association asked DEH to gather input as part of the group's regularly scheduled meetings. For the most part, contact with groups that requested evening or Saturday meetings were made on a one-time basis, as these groups either had provided representatives that were attending the regular CEASE meetings, or the groups had requested that a follow-up presentation be made when the CHEOP was completed.

In addition, DEH scheduled and held four community meetings in attempts to reach a broad spectrum of the VB/I-70 site population. Announcements for these meetings were distributed through weekly folders at area schools, and through announcements at Early Head Start locations (See Appendix A).

Some neighborhood representatives participating in CEASE requested that the Spanish-speaking participants in their organization be given additional time to share their ideas. A bilingual DEH staff person conducted confidential small group interviews in which the participants recommended using more mass media to reach the Spanish-speaking community, as they indicated their neighbors were reluctant to attend community meetings.

DEH also established the CHP Steering Committee to address administrative issues, provide a mechanism for coordination and information-sharing between governmental agencies, and develop technical components for biomonitoring and response actions to commence in 2004.

#### **Existing Community Strengths and Weaknesses**

The data in Table 1 describes some of the characteristics of each VB/I-70 neighborhood.

**Table 1. Characteristics of VB/I-70 site Neighborhoods**

Community	Total Community Members (n)	Persons in Poverty (n)	Percent Monolingual Spanish-speaking Families (%)	Percent Children Less than Age 6 (%)	Percent Housing Built Before 1940 (%)	Percent Renter Occupied (%)
Clayton	5,172	1,470	28.5	11.3	39.7	43
Cole	5,662	1,487	40.5	12.1	56	51.7
Swansea/Elyria	6,708	1,853	42.5	12.7	32.3	39.3
Globeville	3,454	758	35	10.6	48.5	37.3
Total	20,996	5,568				

### Community Strengths

Community members reflected numerous strengths of their respective communities. These community strengths are expected to strengthen and improve the CHP.

The communities have strong leaders that are committed to changing their neighborhoods for the better. They are extremely committed to improving the lives of the children within their community, and working with other community members to do so, whether they are Black, Latino, White, young, or older. The commitment is demonstrated by numerous activities and organizations already existing within the communities. Attendees at many of the meetings in many venues reflected the diverse population and the commitment to honoring this diversity.

Community members also are represented by strong and committed organizations. The VB/I-70 community (Swansea/Elyria, Globeville, Cole, and Clayton) has agreed to be represented by a strong organizational group named CEASE. The CEASE members present their community's feedback during meetings with government agencies and report back to their individual communities about the issues addressed. Numerous other community-based organizations, both new and established, serve the community and represent its diverse interests. These organizations include the registered neighborhood organizations, Cross Community Coalition, the Cole-Clayton Neighborhood Alliance, COPEEN, the Swansea/Elyria Community Development Center, and numerous churches and faith-based organizations. Additional organizations providing service to the community include Inner-City

Health Clinic, Northeast Denyer Housing Center (NDHC), Head Start programs, and Children's Hospital School-based Health Program. Several organizations publish neighborhood newsletters in which CHP information can be distributed. Other organizations have block captains that may be available to disseminate information.

Another community strength that should add to the success of the CHP is the knowledge, expertise, and relationships built through participation in the VB/I-70 Working Group, which has been meeting on site-wide issues since 1998. Due to this history, members were familiar with many technical aspects of the site, with health issues associated with arsenic and lead exposure, and with the Superfund regulatory framework. There also has been significant outreach and education about the VB/I-70 site from both EPA and the communities that has provided for a higher level of knowledge regarding the site within the communities at large. Additional information and education on the VB/I-70 site, such as will be provided by the CHEOP, will be of benefit to the community.

In addition, the VB I-70 community leaders are committed to the Community Health Plan and to complete community participation in the soil testing and remediation of contaminated soil. Community members have provided assistance to EPA in gaining access for testing and remediation, and in suggesting ways to improve communications.

Another asset to the community that should aid in acceptance of the CHP is that remediation has begun and is in progress within the community. Community members can see the benefits of yard cleanup and have hope that the overall project will be completed and be successful. Soil removals, to date, have resulted in improved appearances for area yards, causing some community members to overcome initial fears of the remediation process.

The Kids At Play Health Study (KAPHS) contributed a great deal to the community by testing many neighborhood children for blood lead and arsenic levels during the summer of 2002. The KAPHS study provided baseline data on blood lead levels in the VB/I-70 neighborhoods. The study also benefited greatly from community involvement, and was an example of agencies and community working in partnership to accomplish joint goals.

In Cole and Clayton, the Healthy Children's Partnership programs provide lead poisoning education and limited in-home lead paint testing, through separate grant funding. Neighborhood youth provide educational outreach and community workers are trained to conduct education and paint testing. The Healthy Children's Partnership programs are currently administered through the Northeast Denver Housing Center (NDHC).

The Northeast Denver Housing Center also manages and administers a large grant from the federal Department of Housing and Urban Development (HUD) agency, which provides funding for lead-paint abatement in the homes of lead poisoned children. Should VB/I-70 area children be identified with elevated blood lead levels resulting from deteriorated lead paint, we anticipate that families can be referred to NDHC and they may be eligible for federally-funded lead paint abatement of their homes. In addition, although perhaps not directly related to CHP activities, the City and County of Denver has designated the neighborhoods as Enterprise Zone or Focus Neighborhoods to assist with economic development activities.

Staff from DHHA, CDPHE, EPA, ATSDR, DEH, and other agencies provide their expertise with the community, both because of Superfund site-related activities as well as other community endeavors. During CHP implementation, bilingual DEH staff will be available to train the trainers, as well as provide guidance to the community health workers and organizations conducting the environmental health education activities. DEH staff have a substantial amount of experience in managing grants related to lead poisoning prevention activities. Recent DEH grants have focused on the use of promotoras (community lay health workers) to educate Spanish-speaking communities about lead hazards, and the use of school-based outreach programs to promote lead poisoning prevention by emphasizing hand washing activities and increased dietary calcium intake.

### **Weaknesses**

As in any community, the VB/I-70 communities have some weaknesses that may make success of the CHP more difficult. As the program is implemented, we must remain aware of these factors and take steps to address them in order to accomplish program goals.



Although CEASE and the neighborhood organizations have successfully represented the VB/I-70 community, involvement in civic affairs appears to be limited to relatively few individuals in proportion to the community population. Perhaps this lack of involvement could be attributed to the fact that area residents must work more hours than is the norm in more affluent communities and they do not have time for participation. Another serious weakness is the lack of participation in community affairs by Spanish-speaking residents, given they make up from 35–60 percent of the population in these communities. This lack of community involvement may be attributed to persons with less formal education, the large number of undocumented residents, a limited knowledge of the English language, and many residents being unfamiliar with “how the system works” in the United States. In addition, the Spanish-speaking residents, both documented and undocumented, often have a distrust of government activities and government agencies. This distrust has been documented by a number of authors (e.g., Linton, C., 1999. *10 Steps to a More Accurate Census Count of Minorities and Immigrants*. Illinois Ethnic Coalition, Chicago, Ill. <http://www.medill.nwu.edu/ie/c/Survey.html>).

Although the neighborhood organizations have had great success in collaborating on environmental issues, another community weakness is the friction between a few individuals in different neighborhood organizations that sometimes results in competing agendas or an unwillingness to attend common meetings.

Lastly, these neighborhoods have to deal with many difficult issues in addition to those specific to the Superfund site. The neighborhoods face a variety of environmental issues, poverty-related economic concerns, and ethnic and race-related concerns, the latter particularly because of the large and relatively recent increase in immigrant residents. Due to the many competing concerns, community residents sometimes are overwhelmed by VB/I-70 site issues and choose to deal with the other issues that immediately present themselves.

Furthermore, despite widespread efforts at community education, some members of the public remain confused about site cleanup issues. Community members have expressed misunderstanding as to why some yards are receiving cleanups, while other yards are left unchanged. Also, there appears to be a lack of understanding as to why VB/I-70 community members are not receiving monetary compensation, while residents in another nearby community did receive compensation in an earlier

settlement of environmental issues. This appears to have led to concern and confusion on the part of some residents.

All communities have their strengths and weaknesses, the VB/I-70 area included. The VB/I-70 area is fortunate to have community leaders involved and committed to education and prevention, pediatric testing, environmental sampling for lead and arsenic, and the soil remediation program. In review, the weaknesses strongly suggest the need for a culturally sensitive and community-based outreach and health education program.

### Environmental Justice Concerns

The VB/I-70 site is an Environmental Justice site because the community is predominantly low income, minority, and is disproportionately affected by environmental impacts from many sources including industry, other Superfund sites, and major transportation corridors. The selected remedy includes a Community Health Program that will address soil pica behavior, as well as sources of lead exposure other than soil, such as lead-based paint inside homes. The CHP is an attempt to address cumulative environmental sources and their impacts in this Environmental Justice community. The EPA has asked input from, and has worked with, community representatives to develop the design of this program and for help in implementation.

The VB/I-70 communities are affected by air emissions from many industries that operate in the area, as well as having received historic emissions from several smelters. The 1998 Regional Geographic Initiative conducted by Cross Community Coalition identified emissions sources for zip code 80216<sup>1</sup> that include the following: mobile sources (vehicles), bakeries, manufacturing facilities, printers, metal shops, vehicle repair shops, refineries, and a coal-burning electric power plant. EPA's Toxic Release Inventory (TRI) database reports that 339,884 pounds of chemicals were released to the air from industries in the 80216 zip code for the year 2002, the last year for which data are available. While not specifically addressing air emissions, the CHP is an attempt to address the cumulative sources of exposure for the chemicals of concern (i.e., lead and arsenic) for the VB/I-70 site, since it has been designated as an Environmental Justice community.

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<sup>1</sup> Zip code 80216 is not contiguous with, but includes approximately the northern half of the VB/I-70 site.

### **What Has Worked in Other Communities**

A review of the literature was conducted at the request of the CEASE VB/I-70 CHEOP working group to determine what methods had worked in similar community health projects. DEH staff collected data by searching computerized bibliographic databases and by contacting organizations currently conducting community-based health programs in predominantly Latino communities. The studies selected from the data bases were conducted during the past five years. Additional information was drawn from the cancer, diabetes and HIV prevention fields, because research was lacking on lead poisoning prevention interventions publicized in recent community or public health journals or in government databases. The criteria for inclusion were whether the program was conducted in a predominantly Latino low-income community and if the program was able to demonstrate significant progress toward meeting the program objectives. Eighty-three studies were identified from the literature as meeting the inclusion criteria. Thirty-four of the 83 identified studies involved environmental health interventions. The different approaches used by the successful programs were categorized according to the type of intervention utilized:

- Health systems change (primarily health care provider education/program coordination)
- School-based interventions with a parent education component
- Risk reduction
- Landlord training
- Renovation
- Drama
- Computer-based learning
- Information repositories
- Surveillance programs
- Mass media or social marketing campaigns
- Support groups for parents
- Education through visual art
- Education utilizing professional community health educators
- Education utilizing community health workers
- Combination programs utilizing at least two of the above mentioned intervention methods.

Twenty-nine of the published intervention programs in Latino communities utilized community health workers, fifteen utilized professional community health educators to educate the community residents, nine used media campaigns, and seven utilized a school-based approach. Eight programs utilized combinations of the five most popular types of intervention. Table 2 shows the categories of interventions utilized in the programs reviewed; some sources were counted in more than one category.

<b>Table 2. Categories of Interventions Utilized in Reviewed Health Programs</b>	
Education utilizing community health workers	29
Education utilizing professional community health educators	15
Mass media or social marketing campaigns	9
Combination programs (also counted in other categories)	8
School- based	7
Health systems change	6
Renovation	4
Drama	3
Risk reduction	3
Education through visual art	2
Surveillance programs	2
Landlord training	1
Computer based learning	1
Information repositories	1
Support groups for parents	1

Only programs were selected that demonstrated success in meeting program objectives while working with a predominantly Latino community. As can be seen in Table 2, education utilizing community health workers was the most preferred method among programs showing success. Other intended components of the CHP were also successful, including health system change and renovation training.

## **Community Goals and Expectations for the CHP**

### **Goals for the CHP**

During meetings, community members considered certain requirements important in describing the community health program. The following factors were listed as important components of the CHP by the participating community members:

- (a) CHP would be in effect until soil removal is finished.
- (b) The CHP would provide biomonitoring to look for exposures.
- (c) The CHP is intended to protect children from all lead hazards, not just hazards from lead in soil.
- (d) The CHP will educate community members about the soil removal program.
- (e) The CHP will educate community members, especially families with young children, about lead and arsenic hazards.
- (f) The CHP will educate about pica behavior in children.
- (g) Education and outreach on the CHP will be provided for all families.
- (h) There will be community involvement in developing and providing the community health plan.
- (i) The program will address health risks for residents.
- (j) Participation in the program is voluntary and free of charge.
- (k) The program will make resources available to conduct the community health program.
- (l) The CHP will provide a response to identified exposures.
- (m) Environmental clean-up will be provided under ROD requirements.
- (n) After many years of work, the community and agencies came up with a program with which they can live.

It is important that the above facts and benefits be honored in the planning and implementation of the CHP, in order to create a CHP that provides benefit to the community.

### **Expected Benefits of the CHP**

The community members recognized that the CHP can provide numerous benefits to the community that include the following, listed below. The plan should be designed, implemented, and adjusted as needed to accomplish these benefits for the community.

- a) Help prevent exposures before they occur, through education and outreach activities.
- b) Involve the community in prevention, education, and outreach to utilize community strengths and partnerships and reach community members not normally reached through standard methods.
- c) Minimize potential exposures to site chemicals of concern (COCs) during the timeframe in which the site remedy is being implemented, but is not yet complete.
- d) Reduce children's exposure to sources other than soil. Especially for lead, it is well documented that there are multiple potential sources of exposure, including deteriorated lead-based paint, the predominant source of exposure for most children.
- e) Ensure that community members are appropriately tested (biomonitored) for exposure to the contaminants of concern.
- f) Ensure that community members with elevated levels of exposure are provided with appropriate follow-up investigation, referral, and mitigation.
- g) Ensure that the community becomes an integral component of ensuring that a protective remedy is implemented.
- h) Identify and provide interventions for children exhibiting pica behavior. Typically, pica children require interventions in addition to those provided by a simple soil removal program. This is because they are at risk for health effects from contaminants such as lead in soil, even at urban background levels.
- i) Verify remedy effectiveness. It is important to collect data on remedy effectiveness to ensure that a protective remedy has been selected. Data can be evaluated periodically to address community concerns regarding the protectiveness of the remedy.
- j) Develop infrastructure, knowledge, and skills within the community to allow continued health education and health promotion efforts in the community.

### ***Expected Outcomes for the CHP***

After discussing goals and expected benefits from the CHP, the group agreed that a number of quantifiable outcomes should be expected from the program. These quantifiable outcomes are described below:

- 1) An infrastructure will be established that allows continued efforts in the community. Because of the high mobility of Denver residents, the communities are united in their desire to insure that the lead poisoning prevention messages are part of ongoing community health efforts even when EPA funding is no longer available. In addition, it is DEH's goal that city agencies will develop capacity to conduct education and outreach with community assistance, develop the skills and infrastructure necessary to manage biomonitoring data and utilize data to understand and plan for public health impacts of lead poisoning, and improve the capacity for agencies and communities to work together to prevent lead poisoning. In years two and three of the CHP, agencies will be inventoried for availability of resources and capabilities, and methods will be determined to continue providing the lead poisoning prevention messages into the future.
- 2) Contacts and information will be delivered to every community household at least once per year. Community members expressed the desire for every household to be contacted at least once a year, over the initial three-year period. This is particularly important, since Denver residents frequently move from neighborhood to neighborhood. Households will be tracked by address to ensure that at least one contact is made per year, regardless of whether there is a change in occupancy. Yearly household contact will help to identify new residents, so that outreach and education efforts can be provided. As new residents are identified, they will be provided with the full suite of CHP services.
- 3) Children will be offered biomonitoring, as discussed in the site record of decision. Every child will have had at least one opportunity to participate in biomonitoring. Community biomonitoring sites will be well-publicized through the neighborhood newspapers, school folders, and through public service announcements in the local media outlets. For each biomonitoring event, information on the event will be provided through door-to-door contacts, weekly folders, or leaflets to ensure that each household within the targeted neighborhoods will be notified of the availability of testing. Youth workers can play an important part in alerting CHP staff to homes with young children who are in need of testing.
- 4) The effectiveness of the outreach and education efforts will be evaluated. Households will receive surveys asking what is effective and what is not. A representative sample of households will be asked to complete an evaluation. The evaluation will include a section to

determine which behaviors, if any, were changed by the residents to reduce the incidence of exposure to lead and arsenic. Community listening sessions will be held as requested with neighborhood organizations, and at least once a year for the 3-year duration of the formal CHP. Process evaluations shall be conducted on a regular basis as part of the community health worker training. Process tracking will also be conducted to ensure that necessary contacts have been made.

- 5) Every community person would have had the opportunity to attend at least one community meeting per year. Meetings will be scheduled to discuss the CHP, at least once per year. Mini-evaluations will be conducted at each community listening session and will also be part of the general CHP evaluation. The evaluation will include questions about which meetings were attended, if any, what participants felt about the information presented and about meeting logistics, and will solicit suggestions for improvement.
- 6) We will have identified what behaviors are causing exposure and will have worked to change behaviors to reduce exposures. Environmental investigations will be conducted for all children with elevated blood lead or arsenic biomonitoring results. Individual cases will be tracked to understand what exposures caused the elevated levels, and data will be aggregated in order to understand what sources and behaviors are causing exposure. Interventions will be evaluated to identify which interventions were successful at reducing exposure levels.

### ***Components of the CHEOP***

#### **Outreach Methods Preferred by the Community**

As a result of the CHEOP planning process, community members reached consensus on how the community outreach and education program should be conducted. The “who, what, how, when, where” of the program specifics are described in the sections below, and are briefly listed in Table 3. For example, it was decided that promotoras will deliver the “lead is bad” message to families by going door-to-door, and attempting a minimum of three contacts per year at each residence. Similarly, the group decided that youth could deliver a variety of messages to other youth, in venues that include school science classes and environmental clubs. The group reached consensus on a number of additional program specifics that are listed in Table 3 and further discussed below.



**Table 3. Summary of CHP Outreach Components**

Who Delivers	Messages	How Delivered	Audiences	Frequency
Promotoras	Lead is Bad	Door-to-door	Families	3 attempts/yr
	Get your kids/home/yard tested	Locations for presentations	Grandparents	others as scheduled by promotoras or DEH
	What you can do	Churches	New home buyers	
	Resources	Boticas		
	Sources of Poison	Clinics		
	You have the power	Out side schools		
	Simple info on home renovation	ESL classes		
		Events, fairs, picnics		
		Preschools		
		Story Circles		
		Neighborhood Groups		
Youth	Same as promotoras	Science Classes	Children/ Youth	As scheduled by DEH
		Env. Clubs	Children/ Youth	School classes 1/yr each class
		Churches	Grandparents and Families	Events - as occur
		Events		community meetings as occur/ scheduled
		Fairs		
		Picnics		
		Neighborhood groups		
		backup for door-to-door later on, depending on skills, safety, assistance needed		
DEH	same as promotoras but as backup QA	Same venues as above, but as oversight	same	
	safe renovation - more complex info	contractor meetings	contractors/ inspectors	groups annually
	importance that info gets out	training sessions	real estates	training every two weeks
	process - tracking and evaluation	schools	principals/ teachers	
	How to train	training sessions	promotoras & training	
	Inspection, Regs and Notification	realtor meetings	landlords	
		Landlords		
Trainers	Safe work practices	training sessions	contractors	as needed

### Who

Participants in all community meetings, including those hosted by CEASE and neighborhood organizations, emphasized the importance of using paid community health workers from the neighborhood to carry out most educational activities. The community health worker model (in Spanish, community health workers are called "promotores" or "promotoras") calls for members of the community to be the primary point of contact for community members, once the workers are trained in the subject matter, preferred delivery methods, and other program specifics. Promotoras also will be expected to conduct outreach at neighborhood events and may assist in presentations at schools. The strength of the promotora model is that community members reflect the make-up of the community and are more accepted than "outsiders". Ideally, the promotoras will be trusted and respected members of the community and will be familiar with the neighborhoods and neighborhood leaders. They will also be reflective of the neighborhood's diversity. They are a mechanism of utilizing the communities' strengths while directing program resources into the communities.

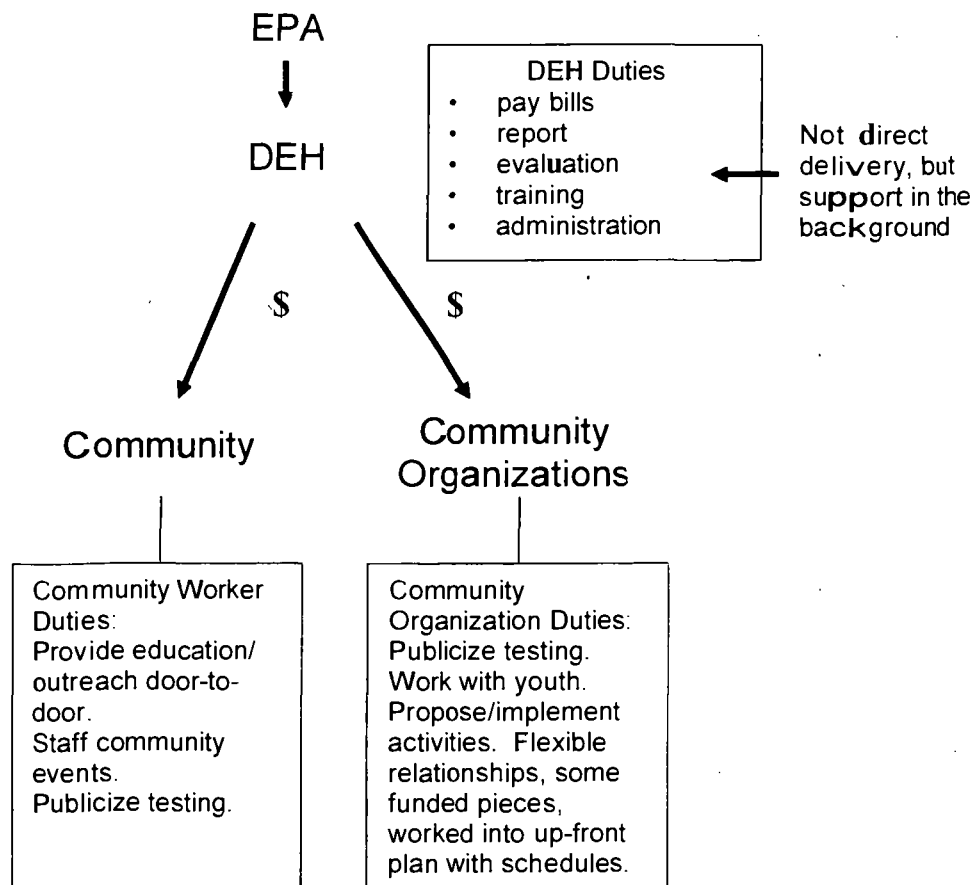
Some neighborhood groups expressed a preference for continued support of their intergenerational Healthy Children's Partnership (HCP), currently funded by a separate grant. The HCP consists of trained volunteers, primarily youth, who canvass the neighborhoods for families willing to have their homes evaluated for lead hazards. The emphasis is on local residents, especially youth, being used to educate the community. Other community representatives expressed concern regarding youth being involved in the project in door-to-door education, as they felt that previous efforts had resulted in inconsistent messages being given to residents. These representatives assimilated the results from other community meetings and voiced approval for youth being involved in the program as presenters at schools and events and to conduct outreach, if supervised by a trained adult, but not be involved in door-to-door education. The youth are to receive the same training as the other community personnel with an emphasis on message consistency.

A preference was expressed that existing community organizations be incorporated into plan implementation. Community organizations are recognized as bringing a number of strengths, in that they know the community, are trusted by community members, and will know of events, locations, and organizations where outreach may be appropriate. In addition, they have greater ability to utilize existing capacity within the community, such as youth groups, and they bring community energy to the project. At the same time, DEH has concern regarding adding another layer of oversight between

DEH and community workers, due to the resultant increases in both overhead costs and complexity of organization, oversight, quality assurance, and evaluation. The group agreed that the promotoras that would be tasked with door-to-door outreach would be under the direction of DEH. The group also agreed that community organizations would be well-suited to provide certain Outreach activities, for example: leafleting neighborhoods for particular events, conducting a school event, or planning and conducting outreach presentations at neighborhood events.

Conceptually, the organizational relationship would involve DEH contracting with a community organization to implement agreed-upon work-plans; see Figure 1, below. Community organizations would be encouraged to develop brief workplan proposals (one-half to one page) that could be funded by the program.

**Figure 1. Community Education and Outreach Organizational Relationship**



DEH intends to work with any neighborhood group that wishes to be involved, but as with all participants in the program, quality work will be required. The group agreed that if one neighborhood group is working on a small project (such as leaflet distribution), it is best to give them the job for the whole neighborhood, versus splitting the project between groups which could lead to confusion.

Youth must be well supervised in terms of the quality of their work and for their safety while working within the community. The training and supervision of youth workers would include an emphasis on message consistency throughout the neighborhoods.

All community workers initially will be trained on lead hazards, outreach methods, informational materials, and evaluation mechanisms, and be provided with regular updates. The "promotora training manual" will provide details regarding expectations for the promotoras. DEH will conduct regular updates and training sessions, initially envisioned to occur on an every-other-week basis, to ensure that outreach workers understand the information materials and expected outreach, tracking and evaluation mechanisms, and to address and resolve any problems that come up in the field. Training and oversight will be provided by DEH. Existing educational materials will be utilized for worker training purposes, as appropriate.

Some outreach and education activities will not be conducted by community members, as DEH or another agency may more appropriately provide the contact. For example, it is expected that DEH or another agency will conduct lead-safe home renovation training for contractors and "do-it-yourself" homeowners, at least initially. Also, DEH expects to be the primary point of contact for school nurses, principals, and other officials within the neighborhoods. It is expected that the Pediatric Environmental Health Specialty Unit (PEHSU), with assistance from ATSDR, will provide medical provider education. In general, however, DEH anticipates its role to be related to administering the CHP, providing training, reporting, evaluation, planning, and organization. While DEH may have some community outreach contact, such as arranging school visits or setting up a meeting with realtors, DEH anticipates doing very little of the direct community interaction. Instead, direct community interaction would be done through community health workers that are hired, trained, and supervised by DEH.

### What

The community representatives agreed on what conceptual messages were important to be transmitted to residents. Table 4 includes the recommended conceptual messages. Community members also expressed strong preferences that we “don’t reinvent the wheel” and that existing fact sheets and educational materials be utilized. After identifying conceptual messages, the groups reviewed numerous existing informational materials to identify preferred fact sheets, identify materials that best captured the recommended conceptual messages, and identify needed modifications. Informational materials for review were requested and obtained from various agencies, including the EPA, ATSDR, NDHC, CDPHE, and other state and local agency lead poisoning prevention programs. Materials for review included simple book marks, fact sheets, coloring books, brochures, posters, and more detailed informational booklets. The materials were reviewed in English and in Spanish, to evaluate the adequacy of translation. Copies of the materials that were reviewed are included in the appendices (See Appendix C).

Copies of review materials were provided to the group in advance. A series of meetings was held over a period of several weeks to obtain group input on the materials. The review process was enabled by using the focused conversation group facilitation method. Group consensus was reached after an extensive review process that included consideration of effectiveness of message communication, cultural appropriateness, visual appeal, appropriateness of reading level and use of graphics. Table 5 lists the materials that were evaluated, the preferred materials selected for use in the CHEOP, and the modifications desired within the preferred materials in order to tailor them to VB/I-70 site residents.

**Table 4. Recommended Educational Messages for the VB/I-70 CHEOP**

<u>Renovation</u>	<u>Steps to take</u>	<u>Resources</u>	<u>Sources of poisons</u>
Renovate homes safely	Home cleaning (windowsills and floors)	Real specific information on the help available	Keys contain lead. Don't lead kids play with keys
Keep kids away from loose or chipping paint	If adults/kids work in yards wash their clothing when they come in	Soil removal is available	Don't use cookware or pottery with lead based glaze
Wash hands and face after playing outside (kids and adults)	Don't let small children play on the porch (old homes)	Attend community meetings to learn more about lead and arsenic	Multiple forms: lead paint, soil, pottery, etc
Safe home remodeling	Don't let your kids play in din	These are the resources available to reduce exposure to lead	Arar con and Greta are poison
Replace or paint over chipped paint on all surface	Spray surfaces to be cleaned with water (to reduce dust)		Lead is in our neighborhood
	Good hygiene prevents lead poisoning		Unexpected lead sources
	Good nutrition helps prevent lead poisoning		
	Hygiene		
	How to protect yourself/kids		
	Good nutrition		
	Wash hands and face and wipe feet when kids come in		
	Don't let kid eat dirt or paint		
	Don't let your children eat dirt - and why		
	Wash window sills weekly		
<u>Kid and testing</u>	<u>Home testing</u>	<u>Lead and arsenic are bad</u>	<u>You have the power</u>
Have children under 6 yrs. tested for Pb based paint	Have you tested your family and house for lead lately? Now you can.	Lead poisoning...Still a problem	You can take actions to protect your kids
Get your children tested	Test home and soil	Lead-free is the way to be	These are the steps I can take to reduce my exposure to lead
Follow up for elevated blood lead levels	If you have an older house, test it for lead paint	Lead paint hurts kids for life!	
Test children for exposure		Pb education for kids, parents	
Your health and your family's health may be at risk. Come in for a screening.		Effects of Pb on kids	
Test child		Lead hurts kids	
Get your kids tested		Lead and Arsenic are dangerous.	
<u>Other</u>			
Culturally sensitive delivery			

**Table 5. Summary of Informational Materials Reviewed for the VB/I-70 CHEOP**

Title of Item	In General Liked It	Readability Level	Clarity of Message	Good Layout	Good Graphics	Contains Some of Our Message	Culturally Appropriate	Value/How Use
1. General information brochures, flyers, packets, etc.								
a. You Can! Prevent Lead Poisoning! Here's How	Use as a checklist. Very good for this.							
b. El Programa de la Prevención de Envenenamiento por Plomo de Colorado	X	EASY	NOTE: the details on these first four (a-d) became irrelevant as group became more clear about what they liked and what they wanted. However, the info appears at the end of the chart. <b>Useable pieces are highlighted in LIGHT GRAY.</b>					
c. Cómo proteger su salud/How to Protect your Health	X	VERY EASY	Change to legal size sheet, adding a column with contact info. Add window sills illustration. To handwashing, at end add "and before eating.:					
d. Fact Sheet: Some Facts About Soil Sampling in the Neighborhood		9TH GRADE?	ONLY THE PICTURE PAGES SEE SPECIFIC RECOMMENDATIONS			YES		Weekly folders & posters for schools
e. LA INTOXICACIÓN CON PLOMO EN LOS NIÑOS	X	type font too small	good content + check list; needs good context & better stats	X	X	X	different vocabulary	Pediatrician's office - has all info, ecxplain, use as needed
f. what every parent should know about LEAD LEVELS IN CHILDREN	mixed review	needs work!	?		X	P. 7, 13	NOT	
g. Too bad the early warning signs of lead poisoning aren't this obvious/Lástima que las primeras señales del envenenamiento por plomo no sean tan claras	X	X	X	X	X had discussion re tape, now ok with it	X	X	FOR ALL HOUSEHOLDS - primary piece - value is simple and readable
h. (EPA) Lead Poisoning And Your Children	Use as a poster only. Really like it for that purpose. Needs correct contact info (local) -- Spanish is available.							
i. Is your home haunted by lead paint?	Use info, but redo without Halloween theme & make a bookmark for mass distribution (schools, libraries...)							
j. Protect your child from lead poisoning	© issue?	too high						
k. Protect Your Family From Lead In Your Home/Proteja a Su Familia en Contra del Plomo en su Casa					X	Effects of lead -- doesn't appear anywhere else -- very important, also include infor from 3c, 3d, 3e		Create a special piece from this information - 1st visit use -- rest as additional info and/or for training
l. What everyone should know about LEAD POISONING	X	language issue				Check for consistent message	Spanish available	Could be an additional info piece.
m. ASTDR additional pictures 1-page color			Simple pages for additional visits - also for schools, school nurses					
n. NEW PIECE: Introduction card	Simple piece that has persons name and organization and why they are there -- with full contact info							



**Table 5 (continued). Summary of Informational Materials Reviewed for the VB/I-70 CHEOP**

<b>2. Home remodeling information</b>							
a. Renovating your home safely							
b. Reducción de los riesgos de contaminación por plomo cuando remodela su casa							
c. Lead in your home: a parent's reference guide							
<b>3. Specific information about lead and arsenic</b>							
a. Datos sobre el plomo y arsénico en el suelo residencial (E/S) plus more in English							
b. Eating Vegetables from Your Garden... (E/S)	An important piece but simplify (remove first paragraph & put at bottom: If your soil has not been tested call now! xxx- Very important for these neighborhoods. Use on first visit!						
c. Lead in Home Remedies							
d. Otros Orígenes de Plomo							
e. Possible Sources of Lead	Merge these two with English on one side, Spanish on the other, use for training & later visits						
<b>4. Blood lead testing</b>							
a. Child Lead Poisoning Is Preventable/E. envenenamiento infantil con plomo se puede prevenir	Need something for 1st visit as the under 6 handout -- this can be the basis of something new or different, or simply be edited.						
b. ¿Qué significan los valores de plomo en la sangre de su niño?/What does you child's blood lead level mean?	Training use, after corrected						
<b>5. Nutrition</b>							
a. Alimentos que Combaten El Envenenamiento con Plomo	Rework and use -- no fighter. Change color scheme, use a different, more appropriate Spanish menu						
b. Lead Poisoning Nutrition and Children: what you should know/El envenenamiento con plomo la nutrición y los niños: lo que usted debe saber							
c. Lead and a Healthy Diet							
d. Combata el Envenenamiento con Plomo con una dieta saludable	Great recipes -- general handout SECOND visit; use as is, available in English & Spanish						
e. Iron/Calcium/Vitamin C							
<b>6. For Children</b>							
a. Let's Learn About Lead Poisoning	for homes with children, SECOND visit; and for preschool/day care sites						
<b>7. For Landlords</b>							
a. The Lead-Based Paint Pre-Renovation Education Rule							
b. Lead Paint Can Poison: Are Your Tenants at Risk?	Combine these two pieces and send them to all landlords. Also use with contractors.						
<b>8. Home Investigation</b>							
a. Testing Your Home for Lead in Paint, Dust, and Soil	For Northeast Denver Housing Center (NDHC)						

**Table 5 (continued). Summary of Informational Materials Reviewed for the VB/I-70 CHEOP**

9. Temporary Measures to Reduce Lead Hazards									
a. Lead Hazards & the Removal of Lead-based Paint		For remodel packet; homes with contractors, including guests; paint stores							
b. Proteja a Sus Hijos del Plomo: Como Limpiar Las Ventanas Correctamente/Keep Your Children Safe From Lead! How to Clean Your Windows the Right Way		Use only for homes with children under 6 and adapt to Denver							
c. Temporarily Reducing Lead Paint Hasards by Cleaning		Use if home or child is positive for lead							
10. Provider Education									
a. Colorado's Lead Poisoning Prevention Program		All the responsibility of ATSDR							
b. Childhood Lead Poisoning in Colorado									
11. Lead Hazards from Work Sites									
a. New piece ATSDR may have this		Due to the hazard of children picking up lead from clothing and hands of people who work with lead.							
General items details from above:		In General Liked It	Readability Level	Clarity of Message	Good Layout	Good Graphics	Contains Some of Our Message	Culturally Appropriate	Value/How Use
a. You Can! Prevent Lead Poisoning! Here's How		X	OK	? Needs better title; good check list	Cluttered	X	X - some key things	X	
b. El Programa de la Prevención de Envenenamiento por Plomo de Colorado		X	EASY	1978, not 1940; --> lead glaze - U.S.	X	X	X	needs notice: English/ Spanish on other side	
c. Cómo proteger su salud/How to Protect your Health		X	VERY EASY	X - add window sills	X	X	X		
d. Fact Sheet: Some Facts About Soil Sampling in the Neighborhood		X in use now, box of info with #s	9TH GRADE?	X - check some numbers, old	X	NONE - map has unhelpful placement	YES	???	Weekly folders & posters for schools
OTHER COMMENTS:									
Important for ALL double sided two-language pieces -- need notice: English/ Spanish on other side									
In Spanish: INTOXICACIÓN is better than envenenamiento to refer to poisoning OR use both words									

### Where

Preferred venues for information delivery include door-to door contacts as the primary mechanism, but they should not be limited to door-to-door. It was agreed that contacts and information dissemination are also important at health fairs, community events, church events, school presentations, science fairs, and science class presentations. In addition, programs to reach real estate agents and building renovators are very important, and need to be geared towards locations or venues where these people can be reached successfully. Information should be available at hardware and paint stores, for example, to reach contractors or people who are re-painting their own homes.

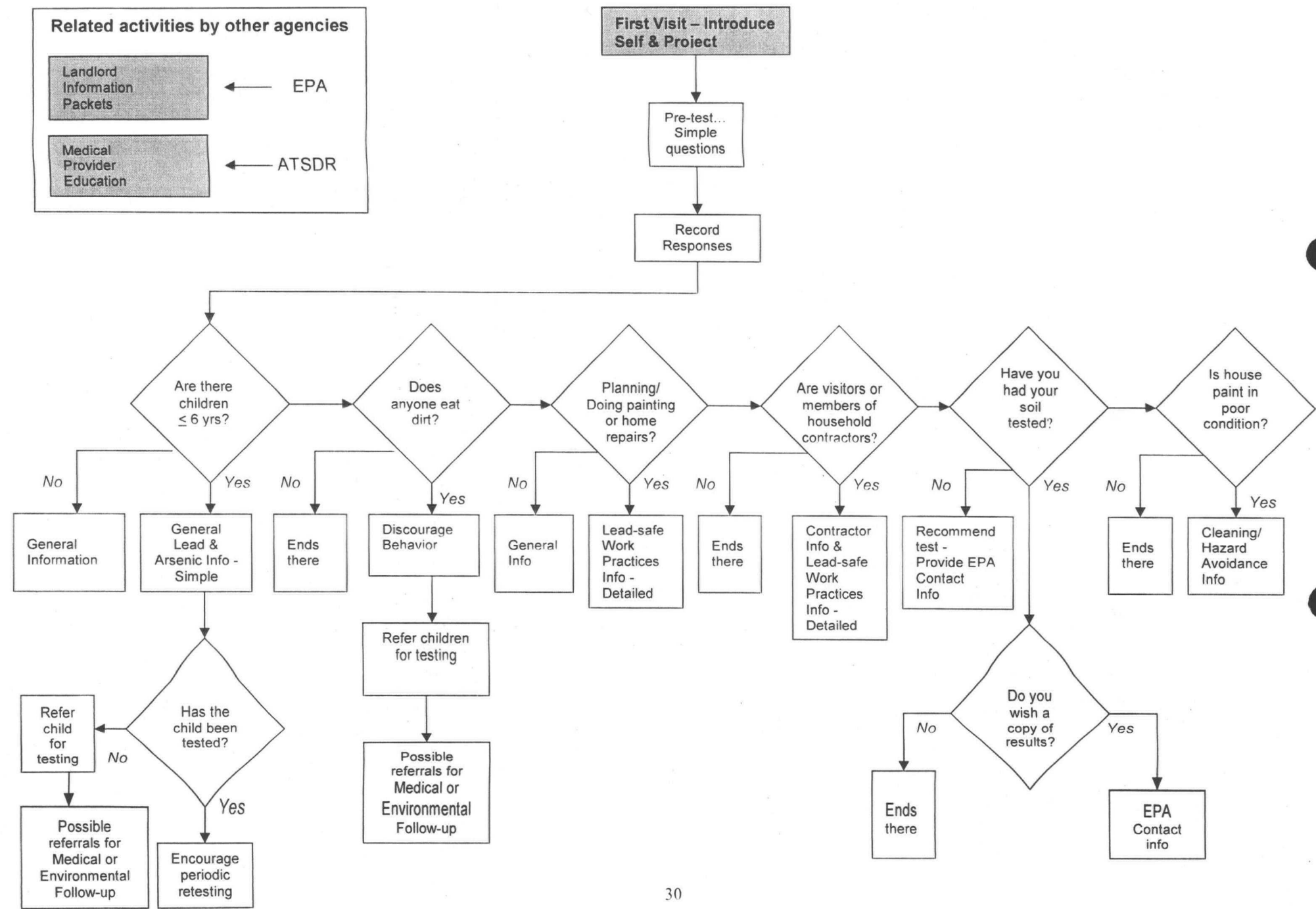
### When

Contacts must be made when people are expected to be at home, so some evening and weekend visits will be required. If a daytime contact is not successful at a particular home, it is expected that an evening contact will be attempted. In order to provide yearly contacts at each home to discuss lead and arsenic issues, numerous contact attempts may be required.

### How

A flowchart was developed and agreed to that describes the expected conversational pathway, once a successful contact has been made. Conversation paths were discussed and developed for the following topics: the hazards of lead poisoning, has your yard soil been tested, have your children been tested, and are you considering any home repairs or re-painting. It was agreed that information concerning each of these paths would be presented to the resident, however, more detailed information on a particular topic would be highlighted, if appropriate. For example, if a family had children under age six, the importance of blood lead testing would be emphasized more strongly than if the residents were older with no children visiting the home. As another example, if a resident were considering home repairs, information on lead-safe home renovation would be stressed, and more detailed materials on that subject would be provided. Figure 2 presents the flowchart describing potential conversational pathways for a promotora's first-visit contact.

Figure 2. Flowchart for First-Visit Contact by Health Education Outreach Worker



A “promotora tool kit” also will be developed that will consist of 3-ring binders created for each block or block group. The binder will contain checklists prepared for each home on the block, so that contacts can be tracked as they are attempted and completed. The binders could also be used to track informational brochures provided at each home, and specifics regarding the home. For example, for the home located at 4504 XYZ Street, after a successful initial contact, the tracking system would contain information regarding the number of children at that home, whether the yard had been tested, what information had been discussed with the resident, and any notes for further conversations. Likewise, if the contact attempt at 4508 XYZ Street was unsuccessful, the notebook would reflect the unsuccessful attempt and the need for repeated contact attempts. Tool kits would also contain needed informational materials.

The binders will provide a house-by-house history of contacts and results and thus would be useful in reviewing promotora progress, identifying problems, identifying homes needing repeated visits, conducting evaluation of program and individual performance, and ensuring that necessary follow-up is provided, even if a replacement promotora is needed to provide the follow-up. See Appendix D for a draft outline of the Promotora Training Curricula and Tool Kit that is under development.

#### Evaluation mechanisms

The group agreed that on-going evaluation of the program is necessary. Evaluation mechanisms need to be relatively simple, at an appropriate literacy level, and in English and Spanish. The group agreed to use an evaluation tool devised by DEH for its “Raising Awareness” lead poisoning prevention grant, which utilizes the Transtheoretical Stages of Change model to evaluate progress in changing behaviors. A draft version of the Evaluation Tool and Supportive Evaluation Guidelines is presented in Appendix E. Process evaluation tools will also be used to track contacts made, promotora awareness, and materials distributed.

#### Reporting mechanisms

CHP activities will be reported to EPA and the community as described below.

- Monthly report to EPA on activities conducted, contacts made, plans for next month, problems, resolution.
- Quarterly report to EPA with preliminary evaluation data.

- Annual report to EPA with formal evaluation results.
- Promotoras will attend neighborhood association(s) meetings monthly and DEH staff will attend meetings at least quarterly; but could do so more often on request, to report results to the community.

#### **Ongoing Communication, Feedback and Revision of CHP Activities**

DEH and other agency representatives will be available to meet with community members or community oversight representatives to provide an opportunity for on-going communication, and feedback regarding the implementation of the program. The frequency, content, and schedule of these meetings will be determined by consulting with community members.

WPY

**QUALITY ASSURANCE PROJECT PLAN TO SUPPORT THE  
BIOMONITORING COMPONENT OF THE COMMUNITY HEALTH PROGRAM  
FOR  
VASQUEZ BOULEVARD AND INTERSTATE 70 (VBI70)  
OPERABLE UNIT 1  
DENVER, COLORADO**

**OCTOBER 2004**

Prepared by  
Colorado Department of Public Health and Environment  
and  
U.S. Environmental Protection Agency Region 8  
Denver, Colorado

With Technical Assistance From:  
Syracuse Research Corporation  
999 18<sup>th</sup> Street, Suite 1975  
Denver, CO 80202

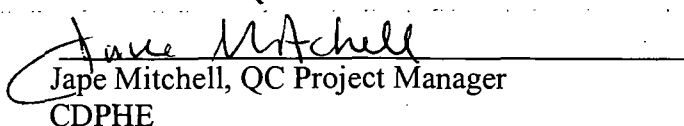
## APPROVAL PAGE

This Sampling and Analysis Plan has been prepared by the U.S. Environmental Protection Agency and the Colorado Department of Health and Environment, with technical support from Syracuse Research Corporation. Sampling and analysis activities addressed in this Plan are approved without condition.



Victor Ketellapper, PE  
USEPA Remedial Project Manager

11-1-04  
Date



Jape Mitchell, QC Project Manager  
CDPHE

11-2-04  
Date



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## ATTACHMENTS

Attachment 1	Flowcharts for Lead and Arsenic Exposure Evaluation
Attachment 2	Data Collection and Tracking Forms
Attachment 3	Informed Consent Forms
Attachment 4	Protocol for Sample Collection, Numbering and Shipment
Attachment 5	Protocol for PE Sample Collection
Attachment 6	CTQ Internal Quality Control Procedures

## SECTION A. PROJECT MANAGEMENT

### A1. KEY PERSONNEL

The project for which this Quality Assurance Project Plan (QAPP) has been prepared is being sponsored by the USEPA, and is being planned and performed by representatives of a number of local governmental and public health agencies, including the Colorado Department of Health and Environment (CDPHE), Denver Environmental Health (DEH), Denver Health and Hospitals (DHH), and the Northeast Denver Housing Center (NDHC). Many components of this program will be developed in consultation with community representatives and under the oversight of a steering committee chaired by DEH. More detailed descriptions of the duties and tasks assigned to individual agencies are specified in an interagency memorandum of agreement (MOA).

The basic focus of this project is a human exposure biomonitoring program that is part of a larger Community Health Program (CHP) at the Vasquez Boulevard and Interstate 70 (VBI70) Superfund site in Denver, Colorado. A biomonitoring subcommittee, chaired by the Colorado Department of Public Health and Environment (CDPHE), is tasked with overseeing development of a biomonitoring plan, including all testing protocols and the QAPP. The following individuals will serve as key contacts and provide managerial and technical expertise during implementation of the biomonitoring component of this project:

- Victor Ketellapper, USEPA Remedial Project Manager. Mr. Ketellapper will be responsible for providing support to the local agencies that are planning and performing the project.
- Jane Mitchell, CDPHE. Ms. Mitchell will serve as CDPHE's primary technical representative for development of the QAPP, will oversee all components of the arsenic biomonitoring program and help ensure proper coordination with each of the local agencies that are participating in the planning and performance of the project.
- Mishelle Macias, CDPHE. Ms. Macias will oversee coordination of all of the neighborhood-based testing clinics, and will help ensure proper coordination for the lead testing portion of the biomonitoring program with each of the local agencies that are participating in the planning and performance of the project.
- Wendy Hawthorne, NDHC. Ms. Hawthorne will assist with selection of neighborhood-based clinic testing sites, and assist with logistics of sample collection and clinic staffing.

## **A2. PROJECT BACKGROUND AND OBJECTIVES**

### **Project Background**

The VBI70 Superfund Site consists of several residential neighborhoods covering approximately 4-square miles. The area is near the locations of three former smelters, and investigations conducted by the USEPA identified over 850 properties in which concentrations of lead and/or arsenic in soil in residential yards exceeded conservative health-based goals.

A record of decision (ROD) was signed in September 2003 to address potential health risks to residents due to soil contamination in the VBI70 area. Under the ROD, EPA will conduct soil removal for all residential yards exceeding 400 mg/kg lead or 70 mg/kg arsenic. Soil cleanup is anticipated to take a minimum of three years to complete. In addition to removal of contaminated neighborhood soil, the ROD also specified that a community-based health program (CHP), including metals biomonitoring and general education, be provided for residents in the affected neighborhoods until soil remediation was completed.

### **Project Objectives**

EPA's ROD established the following goals and objectives for the CHP:

1. Address risks to residents living on contaminated soils until site cleanup of metals-contaminated soils is complete.
2. Address risks to children with soil pica behavior.
3. Address risks to children exposed to lead from multiple sources.
4. Provide biomonitoring to identify exposure that may be occurring.
5. Provide response actions for all community participants with elevated metals exposure.
6. Provide health education about ways to identify high soil contact behaviors and mitigate risk of exposure to lead and arsenic.

This document focuses on the planning and implementation of the biomonitoring component of the CHP. The biomonitoring program will offer free testing of blood, urine, and hair to screen for levels of lead and arsenic in residents living in each neighborhood within the VBI70 site.

The primary goal of the biomonitoring program is to provide on-going surveillance within the community to provide information to individual families about whether elevated exposure may be occurring in their home environment, and if so, to help identify the sources of those exposures and provide environmental and medical follow-up, as needed. Secondary goals of the biomonitoring program include collection of sufficient biomonitoring data to allow calculation of community-wide summary statistics on exposure levels, and possibly to allow statistical investigation of the relative importance of soil contamination as an exposure source.

The biomonitoring program targets young children because this is the age-group most at risk of exposure from contaminated soils, due to their age-specific behaviors such as crawling, playing outdoors in the soil, and mouthing objects which may have come into contact with contaminated soil or dust. Young children who exhibit pica or dirt-eating behaviors present a particular concern for potentially having high acute exposure to metals-contaminated soil.

In cases where biomonitoring data indicate an elevated exposure to lead or arsenic is occurring, health coordinators will work with families to help identify the likely exposure source and provide guidance to the family on ways to mitigate or prevent that exposure. Program managers will coordinate with other agencies able to provide additional services to the family to address exposure sources believed to be contributing to lead and arsenic exposure. Northeast Denver Housing Center (NDHC) will provide paint testing and abatement where appropriate. EPA will also be asked to provide high priority soil cleanup for homes where children have an elevated test result which is believed to be associated with soil or dust levels at their property. Families must provide written consent to share information about their child's test results with agencies other than CDPHE or DHH to receive these additional services.

### **A3. PROJECT/TASK DESCRIPTION**

The basic tasks that must be performed to achieve the objectives of the biomonitoring program include the following:

- Establishing and staffing sample collection facilities in each neighborhood
- Advertising and recruitment of children into the program in each neighborhood
- Collection and analysis of biomonitoring samples
- Reporting of results to citizens
- Environmental and medical follow-up actions, as needed

### **A4. DATA QUALITY OBJECTIVES**

Data Quality Objectives (DQOs) are statements that define the type, quality, quantity, purpose and use of data to be collected. USEPA has published a number of guidance documents on the DQO process (USEPA 1994, USEPA 2000, USEPA 2002), and this project plan has been developed in accord with that guidance. In brief, the DQO process follows a seven-step procedure, as follows:

1. State the problem that the study is designed to address
2. Identify the decisions to be made with the data obtained
3. Identify the types of data inputs needed to make the decision
4. Define the bounds (in space and time) of the study
5. Define the decision rule that will be used to make decisions
6. Define the acceptable limits on decision errors
7. Optimize the design for obtaining data in an iterative fashion using information and DQOs identified in Steps 1-6

Following these seven steps helps ensure that the project plan is carefully thought out and that the data collected will provide sufficient information to support the key decisions that must be made. The following sections summarize the application of the DQO process to the biomonitoring program of the VBI70 CHP.

#### **Step 1. State the Problem**

Individuals residing in some areas of the VBI70 site may be exposed to elevated levels of lead or arsenic in soil or other media. These exposures could be of health concern in some cases. Collection and analysis of blood, urine, and/or hair is one method for identifying individuals who have elevated exposures and identifying individuals whose exposures could be of potential concern.

#### **Step 2. Identify the Decision**

The basic decision that must be made is whether the biomonitoring results for an individual do or do not suggest that elevated exposures to lead or arsenic are occurring.

#### **Step 3. Identify Inputs to the Decision**

In order to make this decision, two inputs are required:

- The measured concentration of contaminant (lead, arsenic) in the sample
- An estimate of the range of normal exposure levels

For lead in blood, the USEPA and the CDC have established a concentration of 10 ug/dL as the level of health concern. However, for the purposes of this program, concentrations above 5 ug/dL will be interpreted as an indication that exposures are higher than typical, and additional educational and outreach efforts will be provided for these families by NDHC and by DHH, as determined to be appropriate by the case manager. For arsenic in urine or hair, there is no established level of concern based on health risk, but there are values that indicate exposures that are higher than typical. These values are 20 ug/L for arsenic in urine and 0.2 ug/g in hair. These values are summarized below:

Chemical	Sample Type	Indicator of Elevated Exposure
Lead	Blood	> 5 ug/dL
Arsenic	Urine Hair	> 20 ug/L > 0.2 ug/g

#### **Step 4. Define the Study Boundaries**

##### **Spatial Bounds**

The spatial boundaries for the biomonitoring program include all residences located within the boundaries of the VBI70 site. This geographic area includes all or portions of the Elyria/Swansea, Clayton, Cole, Curtis Park, and southwest Globeville neighborhoods.

##### **Temporal Bounds**

The biomonitoring program will continue to operate until EPA has completed remedial activities within the residential areas (Operable Unit 1) of the VBI70 site. It is expected that the majority of the activities of the biomonitoring program will occur in the late summer or early fall of each year that the program operates, since this is the time of year when exposure of children to contaminants in outdoor soil are likely to be highest. However, the biomonitoring program will continue to operate throughout the year to ensure that citizens always have access to testing.

#### **Step 5. Develop a Decision Rule**

An individual will be considered to have normal levels of exposure if none of the biomonitoring samples collected from the individual exceed the normal ranges identified above. If one or more of the samples exceed the normal range, and if the values are confirmed by re-sampling, then the individual will be considered to have a source of exposure that is higher than typical, and follow-up actions may be necessary to identify the exposure and to address any resultant medical concerns.

#### **Step 6. Specify Limits on Decision Errors**

Measurement of chemical concentration values in a biological sample is subject to error. Because of this error, two types of decision error are possible:

Type I Error (False negative): The measured concentration is below a level of concern when the true concentration is above a level of concern

Type II Error (False Positive): The measured concentration is above a level of concern when the true concentration is below the a level of concern

Both types of error are undesirable and should be limited to the extent possible. The most effective way to do this is ensure that measured concentration values have a high probability of being within a specified factor of the true value. These accuracy goals are specified below:

Sample Type	Concentration Range	Data Quality Objectives
Blood lead	0-15 ug/dL > 15 ug/dL	$\pm 2$ ug/dL $\pm 20\%$
Urinary Arsenic	0-50 ug/L > 50 ug/L	$\pm 5$ ug/L $\pm 20\%$
Hair Arsenic	0-1 ug/g > 1 ug/g	$\pm 0.05$ ug/g $\pm 20\%$

Achievement of these accuracy goals will limit the frequency of both Type I and Type II errors, and will ensure that if a decision error is made, the magnitude and consequences of the decision error will not result in the occurrence of any significant health risk to the individual.

#### Step 7. Optimize the Design for Obtaining Results

Data quality indicators will be monitored during performance of the project, and refinements in recruiting, sample collection, and sample analysis may be implemented as required.

### B. MEASUREMENT/DATA ACQUISITION

Figure 1 and Figure 2 (see Attachment 1) are flowcharts that summarize the main steps in the collection, handling, and analysis of samples during the VBI70 CHP biomonitoring program for lead and arsenic. Details are presented below.

#### B1. Sampling Design

A series of neighborhood-based testing clinics will be organized and conducted in each of the neighborhoods within the VBI70 area. Target neighborhoods include Elyria/Swansea, Clayton, Cole, Curtis Park, and southwest Globeville. A subcommittee consisting of community representatives, Denver Environmental Health (DEH) and Northeast Denver Housing Center (NDHC) will develop a list of potential sites for the community-based clinics. CDPHE will be responsible for final selection of clinic sites and for coordinating logistics and staffing for all clinics. Separate clinics will be offered in each distinct neighborhood within the VBI70 area over the course of the program. Once locations and testing dates have been determined, program outreach, recruitment, and advertising for the clinics will be coordinated through DEH with the assistance of community members and trained health workers.

Blood lead testing will be recommended for all young children ages 12 to 72 months old. Arsenic testing will be recommended for a subset of children whose behavior indicates they have the potential for arsenic exposure due to high soil contact behavior. Clinic staff will administer a short soil exposure questionnaire to the parent/legal guardian of each child brought to the clinic, to determine whether arsenic testing is recommended (see Attachment 2, Form 2). In addition,



arsenic testing will be recommended for any child who either resides or spends a significant part of their day at a property where arsenic concentrations in soil exceed a level of potential concern for a pica child (47 ppm), whether or not any other risk factors are identified. In cases where data on arsenic levels in soil are not available, soil sampling will be recommended, especially in cases where exposure to soil may be elevated. Access forms giving signed consent to EPA to sample soil at a family's residence, will be available at each testing clinic. Clinic staff will ensure that signed consent (see Attachment 3) is given for lead and/or arsenic testing prior to sample collection.

## **B2. Sample Reporting and Follow-up Testing**

### **B2.1 Reporting of Lead Test Results**

All lead test results will be reported by the analytical laboratory to DHH and CDPHE. DHH will provide contact information to NDHC for all children with a blood lead level over 5 ug/dL, if signed consent for data sharing was obtained from the parent/legal guardian. DHH will be responsible for reporting lead test results back to each individual tested, and will provide appropriate case management for all individuals with an elevated blood lead test, including coordination of follow-up testing in a timely manner. DHH will be responsible for ensuring the privacy and confidentiality of all personal data collected from participants in the lead testing portion of the biomonitoring program, and will ensure that individual data are not released to other agencies or individuals unless written informed consent has been granted by that individual or their parent or legal guardian.

### **B2.2 Reporting of Arsenic Test Results**

All arsenic test results will be reported to CDPHE. CDPHE will then be responsible for reporting arsenic test results back to each individual tested, and will provide appropriate case management for all individuals with an elevated urinary arsenic or hair arsenic test, including coordination of follow-up testing in a timely manner. CDPHE will be responsible for ensuring the privacy and confidentiality of all personal data collected from participants in the arsenic testing portion of the biomonitoring program, and will ensure that individual data are not released to other agencies or individuals unless written informed consent has been granted by that individual or their parent or legal guardian.

### **B2.3 Confirmatory Sampling for Elevated Blood Lead**

Whenever an individual is identified with a blood lead value above 10 ug/dL (as measured using the filter paper technique), an effort will be made to collect a venous blood sample for confirmatory analysis. This venous confirmatory sample is important because venous samples are less prone to potential contamination from external sources than capillary samples. In addition, even though blood lead values are relatively stable over time, concentrations do fluctuate and so a single sample may not reflect the true long-term average.

The venous blood sample will be drawn at a DHH clinic in the VBI70 area. In order to facilitate sample collection and processing, the DHH case manager assigned to the child will work with the parents/guardians to select a convenient DHH clinic and to set a time for sample collection. The case worker will provide the parents with a card that records the address of the clinic selected and the date and time of sample collection. The card will include a sample identification number that will identify the individual as being part of the VBI70 CHP program, to ensure that confirmatory results are received by the case worker and the result entered into the project database for that individual. The parent will be instructed to take the card to the clinic when the sample is drawn and present the card to the clinic staff. The clinic staff will collect the sample at no cost to the patient, and use the card as a "voucher" to be submitted for payment from funding provided by EPA.

The venous blood sample will be submitted by DHH for analysis by a qualified laboratory selected by DHH. The results of the analysis will be reported to the parents by the DHH case manager, and will also be reported by the laboratory to CDPHE. Based on the initial and the confirmatory sample results, the DHH case worker will determine what follow-on case management activities may be needed (e.g., education, environmental investigation, additional monitoring, clinical management), and arrange for those activities with the appropriate agencies.

#### **B2.4 Confirmatory Testing for Elevated Arsenic**

Whenever an individual is identified with a urinary arsenic test value above 20 ug/L, or 20 ug/g (creatinine-corrected test), an effort will be made to collect a repeat urine sample. Because arsenic levels in urine are transitory (half-life of arsenic in urine of approximately 72 hours or less), a repeat test will only reflect arsenic exposure over the past few days prior to the test and, therefore, cannot be considered confirmatory. However, this repeat test will be important as an indicator of whether arsenic exposure is still occurring.

The repeat urine sample may be collected at one of the on-going neighborhood-based clinic sites in the VBI70 area, or the family may be provided with instructions for in-home urine collection, based on the preference of the family. In order to facilitate sample collection and processing, the DCEED case manager assigned to the child will work with the parents/guardians to select a convenient location for sample collection, and will coordinate any necessary in-home sample collection container delivery and sample drop-off. The urine sample will be submitted by DCEED for total non-dietary arsenic analysis by CTQ laboratory per the protocol described in Attachment 4. The results of the analysis will be reported to the parents by the DCEED case manager, who will determine what follow-on case management activities may be needed (e.g., education, environmental investigation, additional monitoring, clinical management), and arrange for those activities with the appropriate agencies.

Whenever an individual is identified with a hair arsenic value above 0.2 ug/g, an effort will be made to collect a repeat hair sample for confirmatory analysis. Confirmatory hair testing will be

offered through one of the on-going neighborhood-based clinics or by in-home collection, based on the preference of the family.

The hair sample will be submitted by DCEED for total arsenic analysis (of the most recent 4 cm of growth) by CTQ laboratory per the protocol described in Attachment 4. The results of the analysis will be reported to the parents by the DCEED case manager, who will determine what follow-on case management activities may be needed (e.g., education, environmental investigation, additional monitoring, clinical management), and arrange for those activities with the appropriate agencies.

### **B3. Sampling Methods Requirements**

#### **B3.1 Blood Sampling**

Blood samples for lead analysis will be collected according to the standard protocol currently used at all State lead surveillance testing clinics (fingerstick/filter paper method). In brief, collection sites are provided with a filter paper collection device, which incorporates filter paper into a 'matchbook' format (Collins and Puskas 2003). Providers are instructed to wash the patient's hands with soap and water and then scrub the fingertip with an alcohol prep pad and allow to air dry. The skin of the propped finger is pierced with a lancet and the first drop of blood is wiped off with sterile gauze. Subsequent drops that form on the finger are then transferred to each of the circles on the card using a capillary tube. After allowing the spots to dry for 2 – 5 minutes, the collector is closed like a matchbook, placed in a plastic 'ziploc' bag and sent to the laboratory for testing.

Normally, a single sample will be collected from each child. However, duplicate samples should be collected occasionally (approximately 1 in 20), especially if blood flow is strong and the child is not distressed by the collection procedure.

#### **B3.2 Urine Sampling**

Trained clinic staff will instruct the child's parent/guardian on how to collect a urine sample at the clinic site. If a child is unable to provide a urine sample, the family will be provided with a urine container, instructions for home collection, and information on sample drop-off/pick-up. The minimum sample volume is about 20 mL. Clinic staff will store all urine containers at the clinic in a refrigerator or a cooler with blue ice. Urine samples may be held at 4°C for up to a week (maximum) before shipment to the laboratory. In general, coolers will be packaged for 2-day FedEx shipping to the analytical laboratory at the end of each clinic.

Normally, a single sample will be collected from each child. However, duplicate samples should be collected occasionally (approximately 1 in 20), either by splitting a single large urine sample into two separate bottles, or else by collection in two different bottles.

### B3.3 Hair Sampling

Hair samples are collected by cutting a patch of about 0.5 cm in diameter from the upper neck region, as close to the scalp as possible. The hair is attached with a staple to a cardboard sample collection card with a preprinted grid. Each hair sample is attached to the card so that the most recent growth (hair closest to the scalp) is attached to the beginning of the grid. Each sample collection card indicates the total length of the hair sample that is to be analyzed (0-4 cm). Each sample collection card is sealed in a labeled plastic bag for shipment to the laboratory. Hair samples will be mailed to the laboratory on a weekly basis at a minimum.

Normally, a single sample will be collected from each child. However, duplicate samples should be collected occasionally (approximately 1 in 20), either by splitting a large hair sample into two, or else by collecting two separate samples (if the child and parent are willing).

In the case of hair sampling, an issue of potential importance is whether the hair should be washed prior to collection. If hair is not washed, dust adhering to the hair may influence the measurement, and the effect of this may be significant<sup>1</sup>. However, for the purposes of this program, no effort will be made to request that parents wash a child's hair before hair sampling. This is because the presence of arsenic-contaminated dust in hair is a valuable indicator of potential exposure, whether or not the child has actually ingested significant quantities of the contaminated dust. However, it is important to recognize that elevated arsenic values measured in unwashed hair may not necessarily indicate that ingestion exposure has occurred.

## B4. Sample Documentation, Handling And Custody Requirements

### B4.1 Field Documentation

A detailed protocol for sample collection and sample labeling is provided as Attachment 4. A copy of this protocol will be provided to all clinic workers.

Clinic staff will be responsible for collecting all necessary information and informed consent forms from study participants, using the forms and questionnaires (English and Spanish) developed specifically for this project (see Attachments 2 and 3). The clinic staff must ensure that all information that is recorded is accurate and legible, and that all case numbers and sample numbers are correctly assigned and recorded.

In brief, each child that participates in the program will be identified with a unique VBI70 CHP case number of the following format:

VBI70 CHP xxxx

---

<sup>1</sup> For example, consider a hair sample whose true arsenic content is 1.0 ug/g. If the hair sample contains 1% by mass of adhering dust and the concentration of arsenic in the dust is 100 ug/g, the amount of arsenic contributed by the adhering dust will be equal to the amount of arsenic in the hair.

All samples provided by that child will also be assigned the same unique identification number. These numbers will be provided as pre-printed sheets of self-adhesive labels that will be available in each sample collection facility. Each sheet will contain multiple copies of each number.

#### B4.2 Sample Handling, Chain of Custody, and Sample Shipment

##### *Chain of Custody and Shipping Transmittal Memo*

All samples collected will be maintained under standard chain-of-custody procedures. A chain-of-custody form shall accompany every shipment of samples to the analytical laboratory (see Attachment 2, Forms 4 and 5). The purpose of the chain-of-custody form is to establish the documentation necessary to trace possession from the time of collection to final disposal, and to identify the type of analysis requested. All corrections to the chain-of-custody record will be initialed and dated by the person making the corrections. Each chain-of-custody form will include signatures of the appropriate individuals indicated on the form. The originals will accompany the samples to the laboratory, and copies documenting each custody change will be recorded and kept on file.

All required paper work, including sample container labels, chain-of-custody forms, custody seals and shipping forms will be fully completed in ink (or printed from a computer) prior to shipping of the samples to the laboratory. The shipping forms or transmittal memo will describe:

- Number of samples
- Date and time of sample shipment
- Analyses requested

##### *Sample Shipping*

##### Blood

Blood samples on filter paper will be delivered by CDPHE to a Denver Health and Hospital (DHH) Lab on a daily basis. Contact information is provided below:

Ingrid Canon  
Project Coordinator  
Denver Health and Hospital Laboratory  
Phone: 303-436-6937

Filter paper samples may be transferred or shipped at ambient temperature.

## Urine

Samples of urine will be shipped to CTQ in Quebec, Canada. Contact information is provided below:

Laboratoire de toxicologic / INSPQ  
945, avenue Wolfe, 4<sup>ème</sup> étage  
Sainte-Foy, Quebec  
Canada G1V 5B3  
Phone : (418) 654-2100  
Email : ctqlab@inspq.qc.ca

Shipments will be packaged in coolers with blue ice for shipping at the end of each clinic session, or stored and shipped in bulk weekly, depending on the number of clinics scheduled and number of samples collected each week. Each shipment will include a chain-of-custody form that lists all samples in the shipment and identifies the analysis requested.

## Hair

Samples of hair will also be shipped to CTQ at the address listed above. Shipments will occur weekly, or more often if needed. Shipment of hair may be at ambient temperature. Each shipment will include a chain-of-custody form that lists all samples in the shipment and identifies the analysis requested.

### **B4.3 Record Keeping**

All sample information forms and all chain-of-custody forms will be maintained until final disposition of the samples by the laboratory and acceptance of analytical results by the project team.

## **B5. Analytical Methods Requirements**

### **Blood Samples (Filter Paper)**

For the analysis of lead in filter-paper blood samples, two 3/16" punches of each sample are punched directly into 15 ml disposable tubes. Blanks are punched in-between each sample to control for carryover. Tubes are vortexed after addition of bismuth internal standard and 3 mL 0.5% nitric acid, allowed to sit for 10 minutes, and vortexed again for 1 minute. Prepped samples are then placed on the autosampler and analyzed by ICP-MS. Analytical conditions are optimized for each instrument model.

Quantification is achieved by generation of a standard curve with each analytical batch. The typical detection limit is 1 ug/dL. Any samples with elevated results ( $\geq 10$  ug/dL) are repeated on a subsequent batch prior to reporting the result. This 're-verification' includes analysis of a filter paper blank prepared from the patient's collection card and resampling of the collected capillary blood. Filter paper blanks that exceed 1 ug/dL lead concentration are not considered reliable and a recollection of a blood sample will be requested. Results that meet required reproducibility criteria will be reported in accordance with CDC guidelines.

### Urine Samples

All samples of urine will be analyzed for total non-dietary arsenic. This total includes both trivalent and pentavalent forms of inorganic arsenic ( $\text{As}^{+3}$ ,  $\text{As}^{+5}$ ), as well as the primary urinary metabolites of these forms (monomethylarsonate (MMA), and dimethylarsinate (DMA)). Complex organic arsenicals found in seafood (e.g., arsenobetaine) are not included in the total.

Details of the sample preparation and analysis are proprietary. In general, iodine is added to the sample and the target analytes are extracted into an organic phase under acidic conditions. A portion of this extract is analyzed for arsenic via ICP-MS. The detection limit is approximately 1.0 ug/L.

### Hair Samples

All samples of hair will be analyzed for total arsenic, using the first 4 cm (representing approximately the last two months of growth) of the hair sample attached to the collection card. In brief, the hair sample is weighed, digested in hot nitric acid, and analyzed by ICP-MS. The hair is not washed before digestion. The typical detection limit is about 0.01 ug/g.

## **B6. Quality Control Requirements**

### *Laboratory-Based QC Samples*

A series of different types of quality control (QC) tests are routinely performed within each analytical laboratory for each analytical method to evaluate the accuracy and precision of test results and to identify any analyses that fall outside acceptable limits. These laboratory-based QC samples include various blanks, duplicates, spikes, and laboratory control standards (see Attachment 6). All routine internal laboratory QC results will be obtained and evaluated as part of the data quality evaluation process for this effort.

### *Field-Based QC Samples*

In addition to the laboratory-based QC samples, a series of field-based QC samples will be included to provide further evaluation of data accuracy and precision. These are described below.

Field Split: Field split samples are two aliquots of the same sample. These samples are submitted blind to the laboratory to measure the precision of laboratory analysis. As described above, field splits will be collected at a frequency of about 5% for blood, urine, and hair, on an opportunistic basis.

The acceptance criterion for field split samples depends on how close the value is to the practical quantitation limit (PQL). For samples more than 5-times the PQL, the initial acceptance criterion is a Relative Percent Difference (RPD) of no more than 30%. For samples less than 5-times the PQL, the initial acceptance criterion is an absolute difference of no more than one-times the PQL. These acceptance criteria may be revised as data become available during the project.

Performance Evaluation (PE) samples are samples of a medium that contain a known and certified level of a contaminant. These samples are submitted blind to the laboratory to measure both the accuracy and the precision of laboratory analysis. PE samples for each medium will be submitted at an overall frequency of about 5%.

The PE samples that will be used in this program are described below. All PE samples will be collected and submitted by the field staff according to the protocol described in Attachment 5.

*Blood PE Samples*

Blood PE samples will be obtained from CDC's blood lead proficiency testing program. A set of three different concentration values will be used:

Low	= < 1 ug/dL
Medium	= 3-8 ug/dL
High	= 12-20 ug/dL.

The exact concentration value will depend on sample availability at CDC, and may change during the course of the program.

*Urine PE Samples.*

Urine PE samples will be purchased from CTQ in Quebec. Preference will be given to urine samples from human volunteers in order to ensure that the samples contain a mixture of arsenic species. A set of three different concentration values will be used:

Low	= < 25 ug/L
Medium	= 25-100 ug/L
High	= 100-300 ug/L.

The exact concentration values will depend of sample availability at CTQ, and may change during the course of the program.



#### *Hair PE Samples.*

At present, no suitable PE samples for hair are available.

Initial acceptance criteria for each type of PE sample will be the value recommended by the supplier. These acceptance criteria may be revised as data become available during the program.

### **B7. Instrument/Equipment Testing, Inspection And Maintenance Requirements**

#### **Sample Collection Equipment**

All sample collection equipment (blood filter paper kits, lancets, urine bottles, etc) will be maintained in a way that prevents contamination.

#### **Laboratory Equipment**

All laboratory instruments used in the analysis of samples generated during this project must be calibrated by the laboratory in accord with the requirements of the instrument manufacturer and the requirements specified in the relevant analytical method. Laboratory instrumentation used for sample analyses will be calibrated in accordance with the recommended analytical methodologies. Calibrations must be acceptable before any measurements on investigative samples may be made. Certified reference materials (CRM) will be obtained by the analytical laboratories. All documentation relating to receipt, preparation and use of CRM will be documented and reported in a quality control chart, to be forwarded as part of the raw analytical data package.

### **B8. Data Management**

All data will be entered into a project-specific database by appropriately trained data entry staff. The data entered into the database will include all relevant field information regarding each environmental sample collected, as well as the analytical results provided by the laboratory. All data entries will be reviewed and validated for accuracy by the data entry manager or his/her delegate. All original data records (both hard copy and electronic) will be cataloged and stored in their original form until otherwise directed by the project directors.

## **SECTION C. ASSESSMENT AND OVERSIGHT**

The following sections describe activities for assessing the effectiveness of the implementation of the project and associated QA/QC. The purpose of the assessment is to ensure that the project plan is implemented as prescribed. The elements include assessments and response actions and reports to management as described in the following sections.

## **C1. Assessment And Response Actions**

Quality Assurance (QA) assessments performed during this project will include the following:

- 1) Oversight of sample collection activities
- 2) Review and oversight of laboratory procedures through QC sample verification

### **Sampling Activities Oversight**

Assessment of sample collection activities will be conducted by a representative of CDPHE or USEPA. Oversight of field activities will consist of unannounced visits to a collection center in order to observe sample collection procedures.

At least one assessment will occur for each collection center, and additional assessments at a center may occur if issues or problems are detected. Any appropriate response action(s) that may be deemed necessary to resolve problems detected during the assessments should be identified during oversight activities. This could range from a simple review of approved SOPs with sample collection staff to address minor problems up to a temporary cessation of sample collection to provide time for senior project managers to address more significant issues.

### **Laboratory Procedure Oversight**

The quality of laboratory analyses will be assessed by evaluation of field and laboratory QC samples (see Section B5). Any deviation of a QC sample from the acceptance criteria above will be evaluated and a corrective action selected. If deviations are minor (only slightly outside the acceptance bounds) and are not consistent over time or sample type, no action will be required. If deviations are consistent (occurring in two or more consecutive weeks) or if deviations are not trivial, the laboratory will be contacted to discuss possible causes and appropriate laboratory corrective actions.

## **C2. Reports To Management**

The representatives of CHDPE or EPA who provide oversight of the implementation of the QAPP will provide the biomonitoring steering committee with verbal reports on project status, as needed. These reports will cover sampling and analysis progress and data quality assessment issues, and will identify any significant problems and recommended solutions.

## **SECTION D. DATA VALIDATION AND USABILITY**

### **D1. Data Review, Verification, And Validation**

The process of data review, validation and verification is intended to provide consistent and defensible analytical results. Analytical data generated as part of this project will be reviewed

and verified before they are incorporated into the project database. Methods for verification and validation are described below.

## D2. Verification And Validation Methods

### D2.1 Data Verification

Data verification will include a review of the findings of all QA assessment activities (see Section C), including assessments of sample collection procedures, sample labeling methods, chain-of-custody procedures, and all assessments of analytical data collection, recording and reporting. If any deviations are identified, the potential impact of those deviations on the reliability of the data will be assessed, and that information will be provided to the biomonitoring steering committee.

### D2.2 Data Validation

The data validation process consists of a detailed evaluation of laboratory QC data to ensure that results are within acceptable limits. The following elements, when applicable, will be reviewed for compliance during data validation:

- Was the specified method used to analyze the sample?
- Was the sample analyzed within the required holding time?
- Was the instrument properly calibrated before analysis?
- Were laboratory blanks free of contamination?
- Were laboratory spike recoveries within acceptance criteria?
- Were laboratory duplicates within acceptance criteria?
- Were LCS results within specified acceptance criteria?
- Was the detection limit adequate?

## D3. Reconciliation With DQOs

Data obtained during the VBI70 CHP biomonitoring program will be periodically evaluated through the Data Quality Assessment (DQA) process (USEPA 1996, 1998) to determine if the data obtained are of adequate quality and quantity to support their intended use. Steps in the DQA process that are applicable to this project are summarized below.

Review the DQOs and Sampling Design: DQO outputs will be periodically reviewed to ensure that they are still applicable. The sampling analysis and data collection procedures will also be reviewed to ensure they are effective and appropriate.

Conduct a Preliminary Data Review: Data validation reports will be reviewed to identify any significant limitations associated with the analytical data. Basic summary statistics will be calculated to learn about the structure of the data and to help identify temporal or

spatial patterns, and to help identify any potential anomalies/outliers.

Select the Statistical Test: Although the primary objective of the biomonitoring program does not involve any statistical tests, the secondary objective calls for investigating the strength of correlation between soil and exposure levels. This will be done using simple correlation and regression analysis.

## SECTION E. REFERENCES

Collins JA, Puskas SE. 2003. Experience Using Filter Paper Techniques for Whole Blood Lead Screening in a Large Pediatric Population. MEDTOX Laboratories, Inc., Saint Paul, MN.

USEPA. 1994. USEPA Requirements for Quality Assurance Project Plans for Environmental Data Operations. Draft Interim Final. U.S. Environmental Protection Agency, Quality Assurance Management Staff. USEPA QA/R-5.

USEPA. 1996. Quality Management Plan for the U.S. Environmental Protection Agency, Region 8. Version 1.0. Denver, CO.

USEPA. 1998. USEPA Requirements for Quality Assurance Project Plans for Environmental Data Operations. Draft Interim Final. U.S. Environmental Protection Agency, Quality Assurance Management Staff. USEPA QA/R-5.

USEPA. 2000. Guidance for the Data Quality Objectives Process (QA/G-4). Final. U.S. Environmental Protection Agency, Quality Assurance Management Staff. EPA/600/R-96/055.

USEPA. 2002. Guidance for Quality Assurance Project Plans (QA/G-5). Final. U.S. Environmental Protection Agency, Quality Assurance Management Staff. EPA/600/R-00/007.

## **Attachment 1**

### **Flowcharts for Lead and Arsenic Exposure Evaluation** (provided in EXCEL file1)

FIGURE 1. FLOW CHART FOR LEAD EXPOSURE EVALUATION

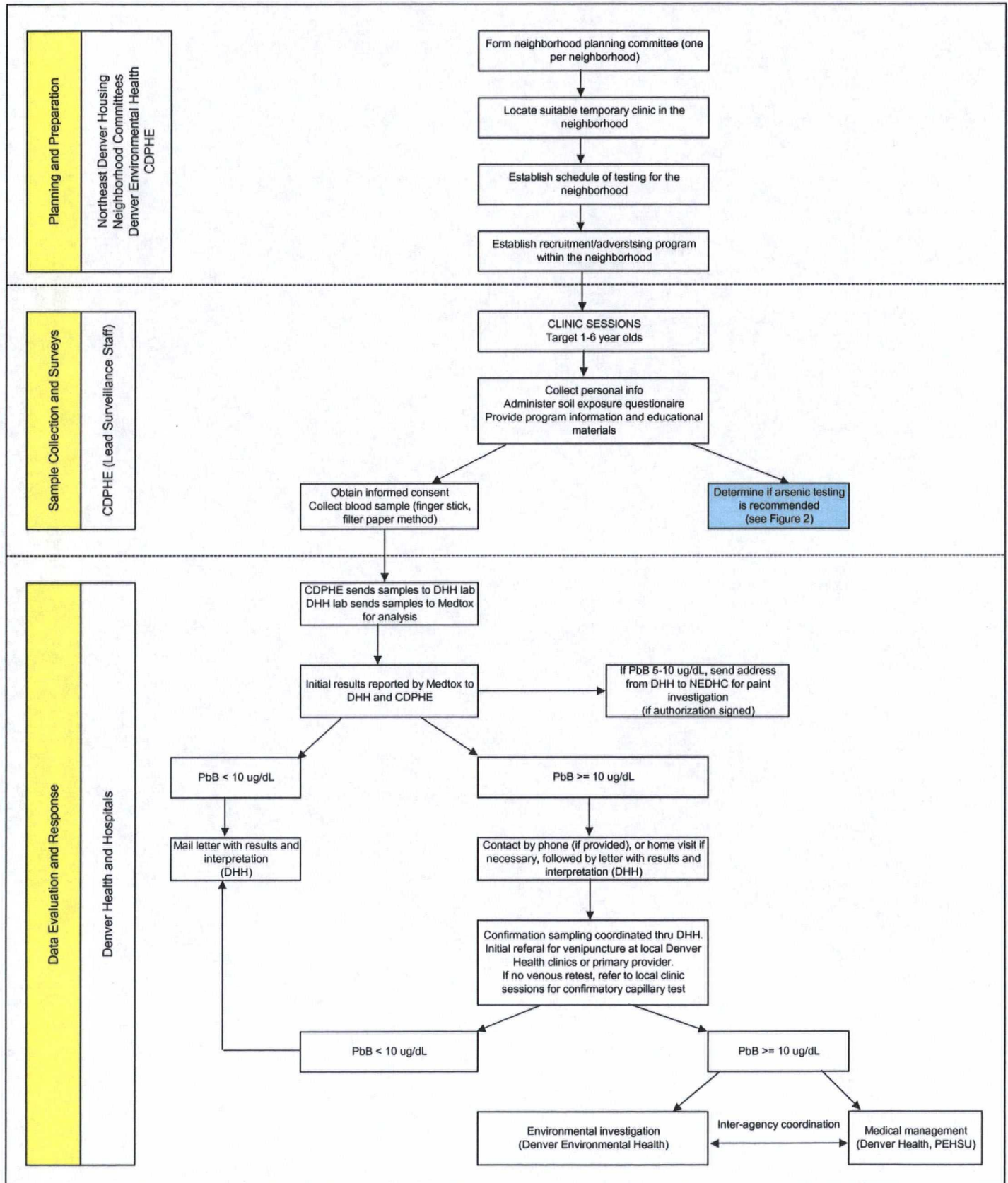
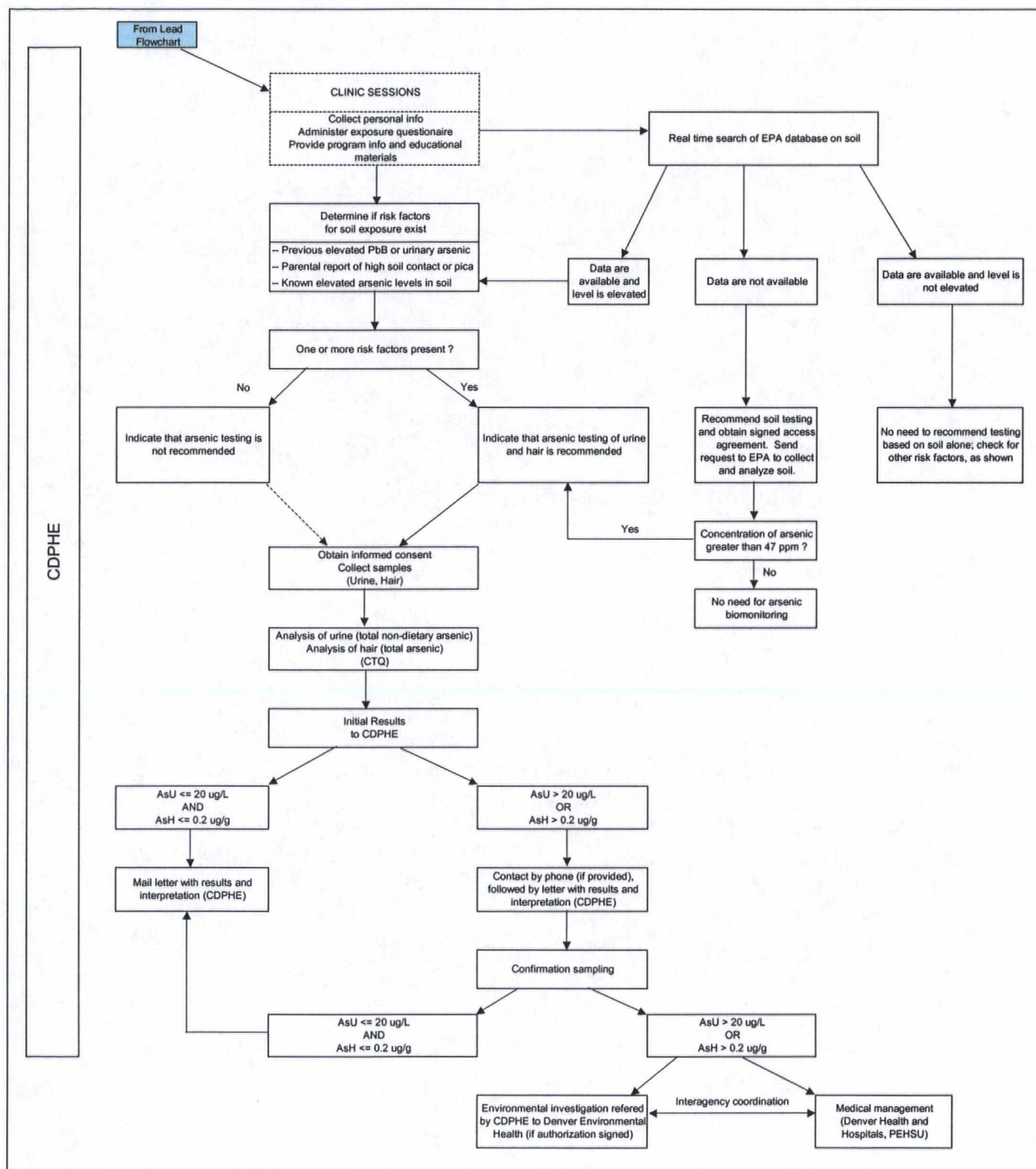


FIGURE 2. FLOW CHART FOR ARSENIC EXPOSURE EVALUATION





## **Attachment 2**

### **Data Collection and Tracking Forms**

## FORM 1: GENERAL INFORMATION

Interviewer Initials: _____	TEST SITE: _____
Interview Language (circle): <u>English / Spanish</u>	Date of Interview: ____ / ____ / ____

Name of Adult: \_\_\_\_\_  
First
Last

Address: \_\_\_\_\_  
Street Name and No.
ZIP

Neighborhood (circle one): Cole Clayton Elvria Swansea SW Globe Curtis Park

How long have you lived at your current address?      Years \_\_\_\_ Months \_\_\_\_

Have you lived at another address within the VB70 area in past 6 months? YES \_\_\_\_ NO \_\_\_\_

If yes, previous address: \_\_\_\_\_  
Street Name and No.
ZIP

How long at previous address?      Years \_\_\_\_ Months \_\_\_\_

CHILD INFORMATION	Child 1		Child 2		Child 3
First Name					
Last Name (if different than adult)					
Date of Birth (dd/mm/yyyy)					
Gender (enter M or F)					
Race (enter one letter) B=Black   W=White   M=Multi-racial A=Asian/Pacific Islander N=Native American, Eskimo, Aleutian O=Other     U=Unknown					
Ethnicity (enter one letter) H=Hispanic   N=Non-Hispanic O=Other       U=Unknown					
Does your child currently receive Medicaid benefits? (Yes/No)					
Does child attend daycare or school? If yes, enter name of facility					
Case Number	<i>Place label here</i>		<i>Place label here</i>		<i>Place label here</i>

CHILD INFORMATION	Child 4	Child 5	Child 6
First Name			
Last Name (if different than adult)			
Date of Birth (dd/mm/yyyy)			
Gender (enter M or F)			
Race (enter one letter) B=Black W=White M=Multi-racial A=Asian/Pacific Islander N=Native American, Eskimo, Aleutian O=Other U=Unknown			
Ethnicity (enter one letter) H=Hispanic N=Non-Hispanic O=Other U=Unknown			
Does your child currently receive Medicaid benefits? (Yes/No)			
Does child attend daycare or school? If yes, enter name of facility			
Case Number	<i>Place label here</i>	<i>Place label here</i>	<i>Place label here</i>

## FORM 2: ARSENIC QUESTIONNAIRE

Child name: \_\_\_\_\_

Place ID Label Here

Arsenic concentration at current residence  
(from EPA database): \_\_\_\_\_ ppm

Check here if no data: \_\_\_\_\_

### PART A: SOIL ARSENIC EVALUATION

1a. Is there another location in VB70 where your child spends four hours per day or more, at least 3 days per week?

YES NO

If yes, what is the address? \_\_\_\_\_

1b. Enter arsenic concentration (from EPA database) \_\_\_\_\_ ppm \_\_\_\_ No data

2. Has your child ever had an elevated blood lead test?  
(If no, skip to Question 3)

YES NO Don't Know

2a. Did a doctor, nurse, or other health worker tell you your child had a high level of lead in their blood?

YES NO Don't Know

2b. Please provide contact information if we may contact them:

3. Has a doctor, nurse, or other health worker ever told you that your child had a high level of arsenic in their urine?

YES NO Don't Know

4. Has your child ever eaten dirt in the past 6 months?

YES NO Don't Know

5. Has your child eaten dirt in the past 2 weeks?

YES NO Don't Know

6. Is it typical for your child to eat dirt most weeks?

YES NO Don't Know

IF FAMILY ANSWERS "YES" TO ANY OF QUESTIONS 2-6, OR IF SOIL LEVEL  $>47$  ppm, RECOMMEND ARSENIC TESTING AND PROCEED TO PART B QUESTIONS BELOW.

IF FAMILY ANSWERS "NO" TO ALL QUESTIONS, AND SOIL LEVELS  $\leq 47$ , OR SOIL NOT SAMPLED, RECOMMEND LEAD TESTING ONLY. SKIP PART B.

## PART B. ARSENIC EXPOSURE QUESTIONS

Note: The Part B questions should be asked only if arsenic testing has been recommended.

---

1. Has your child eaten any of the following fish or other seafood within the past 3 days?

Canned tuna?	Salmon?	Shrimp?
Oysters?	Crab?	Clams?
Sardines?	Other fish?	

YES	NO	Don't Know
-----	----	------------

2. Has your child played outdoors in your yard in bare soil within the past 3 days?

YES	NO	Don't Know
-----	----	------------

3. Within the past six months, has your child used any hair treatments such as hair color or dyes, permanents, hair straighteners, or other chemical treatments?

YES	NO	Don't Know
-----	----	------------

**VBI70 COMMUNITY HEALTH PROGRAM  
FORM 3: SAMPLES COLLECTED**

Child name: \_\_\_\_\_

Case Number: Place VBI70 CHP label here

***If sample is PE, list description here:***

ID Number (CTQ or CDC): \_\_\_\_\_ Nominal Value \_\_\_\_\_

---

***If samples are authentic, fill in below (circle):***

<b>Blood lead</b>	Recommended?	YES		
	Consent Form Signed?	YES		NO
	Samples collected	0	1	2
	Sample label from MedTox	<div style="border: 1px solid black; height: 25px; width: 100%;"></div>		
	Sample label from MedTox (if duplicate collected)	<div style="border: 1px solid black; height: 25px; width: 100%;"></div>		
<b>Urinary arsenic</b>	Recommended?	YES		NO
	Consent Form Signed?	YES		NO
	Samples collected	0	1	2
	Date collected	____/____/____		
	Location collected	HOME		CLINIC
<b>Hair arsenic</b>	Recommended?	YES		NO
	Consent Form Signed?	YES		NO
	Samples collected	0	1	2

Notes or comments:

**FORM 4: CHAIN OF CUSTODY FOR URINE SAMPLES**

Prepared by:		Sample Date:	
Index	Sample Number	Medium	Analysis Requested
1	VBI70 CHP	Urine	Total non-dietary arsenic
2	VBI70 CHP	Urine	Total non-dietary arsenic
3	VBI70 CHP	Urine	Total non-dietary arsenic
4	VBI70 CHP	Urine	Total non-dietary arsenic
5	VBI70 CHP	Urine	Total non-dietary arsenic
6	VBI70 CHP	Urine	Total non-dietary arsenic
7	VBI70 CHP	Urine	Total non-dietary arsenic
8	VBI70 CHP	Urine	Total non-dietary arsenic
9	VBI70 CHP	Urine	Total non-dietary arsenic
10	VBI70 CHP	Urine	Total non-dietary arsenic
11	VBI70 CHP	Urine	Total non-dietary arsenic
12	VBI70 CHP	Urine	Total non-dietary arsenic
13	VBI70 CHP	Urine	Total non-dietary arsenic
14	VBI70 CHP	Urine	Total non-dietary arsenic
15	VBI70 CHP	Urine	Total non-dietary arsenic
16	VBI70 CHP	Urine	Total non-dietary arsenic
17	VBI70 CHP	Urine	Total non-dietary arsenic
18	VBI70 CHP	Urine	Total non-dietary arsenic
19	VBI70 CHP	Urine	Total non-dietary arsenic
20	VBI70 CHP	Urine	Total non-dietary arsenic

Custody Transfer Record No. 1		
Custody relinquished by	Name	Date / /
Custody accepted by	Name	Date / /
Custody Transfer Record No. 2		
Custody relinquished by	Name	Date / /
Custody accepted by	Name	Date / /

**SEND SAMPLE RESULTS TO:**

Jane Mitchell  
 CDPHE - DCEED-EE-A3  
 4300 Cherry Creek Drive South  
 Denver, CO. 80246-1530 USA  
 303-692-2644  
[jane.mitchell@state.co.us](mailto:jane.mitchell@state.co.us)

**FORM 5: CHAIN OF CUSTODY FOR HAIR SAMPLES**

Prepared by:		Sample Date: ____/____/____		
Index	Sample Number	Medium	Analysis Requested	Notes
1	VBI70 CHP	Hair	Total arsenic	
2	VBI70 CHP	Hair	Total arsenic	
3	VBI70 CHP	Hair	Total arsenic	
4	VBI70 CHP	Hair	Total arsenic	
5	VBI70 CHP	Hair	Total arsenic	
6	VBI70 CHP	Hair	Total arsenic	
7	VBI70 CHP	Hair	Total arsenic	
8	VBI70 CHP	Hair	Total arsenic	
9	VBI70 CHP	Hair	Total arsenic	
10	VBI70 CHP	Hair	Total arsenic	
11	VBI70 CHP	Hair	Total arsenic	
12	VBI70 CHP	Hair	Total arsenic	
13	VBI70 CHP	Hair	Total arsenic	
14	VBI70 CHP	Hair	Total arsenic	
15	VBI70 CHP	Hair	Total arsenic	
16	VBI70 CHP	Hair	Total arsenic	
17	VBI70 CHP	Hair	Total arsenic	
18	VBI70 CHP	Hair	Total arsenic	
19	VBI70 CHP	Hair	Total arsenic	
20	VBI70 CHP	Hair	Total arsenic	

Custody Transfer Record No. 1		
Custody relinquished by	Name	Date ____/____/____
Custody accepted by	Name	Date ____/____/____
Custody Transfer Record No. 2		
Custody relinquished by	Name	Date ____/____/____
Custody accepted by	Name	Date ____/____/____

**SEND SAMPLE RESULTS TO:**

Jane Mitchell

CDPHE - DCEED-EE-A3

4300 Cherry Creek Drive South

Denver, CO. 80246-1530 USA

303-692-2644

<mailto:jane.mitchell@state.co.us>



**Attachment 3**

**Informed Consent for Lead and Arsenic Testing**



Colorado Department  
of Public Health  
and Environment



D E N V E R  
H E A L T H

Your Community Health Partner

## VB/I70 Community Health Program Consent Form for Blood Lead Testing

DHHA ID# \_\_\_\_\_

As part of the VB/I70 Community Health Program, we are offering free blood tests for lead to all children one to six years old that live in the VB/I70 Superfund site. Lead poisoning hurts children by causing problems with their development and ability to learn.

We will collect a few drops of your child's blood by pricking their finger with a lancet. Your child may feel some discomfort when the lancet pricks the finger. Trained health care workers will collect the blood sample.

We will only test the blood sample to measure lead. We will send the result of your child's blood test to you through the mail. This may take two weeks. If we find your child has too much lead in their blood, the Denver Health Lead Coordinator will contact you to help you get additional testing and medical treatment for your child. You may also be referred for additional free services if they are needed. These may include a home investigation by Denver Environmental Health, and removal of lead by Northeast Denver Housing Center and the U.S. Environmental Protection Agency (EPA). All information will be kept confidential. Your name, address, your child's name and other identifying information will **NOT** be used in any published report or given to any other person other than you and your state or local health department.

**AUTHORIZATION TO HAVE A LEAD TEST:** I have read the information above and understand the possible discomforts and inconveniences of having my child's blood drawn. I agree to the participation of:

CHILD'S NAME \_\_\_\_\_ BIRTHDATE \_\_\_\_\_

(Result \_\_\_\_\_) Test Site: \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ ZIP \_\_\_\_\_

HOW LONG HAVE YOU LIVED AT THIS ADDRESS? \_\_\_\_\_ YRS \_\_\_\_\_ MONTHS

PHONE (\_\_\_\_\_) \_\_\_\_\_ PARENT NAME (print) \_\_\_\_\_

EMERGENCY CONTACT \_\_\_\_\_ EMERG. PHONE (\_\_\_\_\_) \_\_\_\_\_

CHILD'S PRIMARY CARE PROVIDER OR CLINIC: \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Adult parent or guardian

AUTHORIZATION TO SHARE INFORMATION: If your child has a high blood lead level and you qualify for additional free services, other agencies may want to contact you.

*By signing below, I give permission to the Lead Poisoning Prevention Team (Including Denver Health and Hospitals, Denver Environmental Health, Northeast Denver Housing Center, the State Health Department and the EPA) to share information about my child's blood lead level and address. By sharing this information, I understand I am permitting a representative of these agencies to contact me about free follow-up services.*

*I understand that participation in this screening is voluntary, and that if I refuse to sign here I will not lose benefits or medical care to which I am otherwise eligible, and my child can still get a free blood lead test. This permission will remain in place for one year unless I withdraw it.*

SIGNATURE

DATE

Adult parent or guardian

If you have questions about lead poisoning, please call Mishelle Macías, State Health Department, 303-692-2622, or Keira Zapien, Denver Health and Hospitals, 303-436-3764, to find out your test results.



Colorado Department  
of Public Health  
and Environment



D E N V E R  
H E A L T H

Your Community Health Partner

## Programa Comunitario de Salud VB/I70 - Consentimiento para hacer pruebas en la sangre

DHHA ID# \_\_\_\_\_

Como parte del Programa Comunitario de Salud VB/I-70 C, estamos ofreciendo pruebas gratuitas para detectar plomo en la sangre, para todos los niños de uno a seis años de edad, que vivan en el sitio Superfund VB/I70. El envenenamiento con plomo daña a los niños causándoles problemas en su desarrollo y habilidad para aprender.

Vamos a recoger unas gotas de sangre de su hijo picándole un dedo con la punta de un bisturí. Su hijo puede sentir alguna molestia al pincharle el dedo. Trabajadores capacitados de salubridad recogerán la muestra de sangre.

Hacemos la prueba en la sangre sólo para detectar plomo. Le mandaremos por correo el resultado del análisis de la sangre de su hijo(a). Esto puede tardar dos semanas. Si encontramos que su hijo tiene demasiado plomo en la sangre, el Coordinador de Denver Health Lead se pondrá en contacto con usted para ayudarlo a tener más pruebas y tratamiento médico para su hijo. También se le puede canalizar para que reciba servicios adicionales gratuitos si se necesitan. Esto puede incluir una investigación que haga de su casa de la Oficina de Salud Ambiental de Denver, o que el Centro para la Vivienda del Noreste de Denver y la Agencia de Protección Ambiental (EPA) remuevan el plomo.

Toda la información se mantendrá confidencial. Su nombre, dirección, el nombre de su hijo y otra información de identificación **NO SE USARÁN** en ningún reporte que se publique ni se dará a ninguna persona que no sea usted y su departamento de salud local o estatal, sin su permiso por escrito.

**AUTORIZACIÓN PARA HACER LA PRUEBA DEL PLOMO:** He leído la información que antecede y entiendo los posibles molestias e inconveniencias de hacer que a mi hijo se le saque sangre. Estoy de acuerdo en la participación de:

NOMBRE DEL NIÑO \_\_\_\_\_ FECHA DE NACIMIENTO \_\_\_\_\_  
*Resultado* \_\_\_\_\_ *Lugar* \_\_\_\_\_

DOMICILIO \_\_\_\_\_ CIUDAD \_\_\_\_\_ ZIP \_\_\_\_\_

TELÉFONO ( ) \_\_\_\_\_ - NOMBRE DEL PADRE/MADRE (letra de imprenta) : \_\_\_\_\_

CONTACTO DE EMERGENCIA \_\_\_\_\_ TELÉFONO DE EMERGENCIA ( ) \_\_\_\_\_ - \_\_\_\_\_

PROVEEDOR O CLINICA PARA LA ATENCION MEDICA DEL NIÑO :

FIRMA

FECHA

Padre/madre o tutor adulto

**AUTORIZACIÓN PARA COMPARTIR LA INFORMACIÓN CON OTRAS DEPENDENCIAS DE**

**SALUD**:: Si su hijo tiene un nivel alto de plomo en la sangre y usted califica para recibir servicios gratuitos adicionales, otras agencias pueden necesitar comunicarse con usted.

*Al firmar abajo, doy permiso al Lead Poisoning Prevention Team (incluyendo Denver Health and Hospitals, Denver Environmental Health, Northeast Denver Housing Center, el Departamento de Salud del Estado y EPA) para que comparta la información sobre los niveles de plomo de mi hijo y su dirección. Al compartir esta información, entiendo que estoy permitiendo que un representante de estas agencias se ponga en contacto conmigo en relación con estos servicios gratuitos de seguimiento. Entiendo que la participación en este programa de pruebas es voluntaria, y que si decido no firmar abajo, no perderé los beneficios o la atención médica a los que tengo derecho por otro concepto, y que a mi hijo de le harán las pruebas gratuitas del plomo. Este permiso se mantendrá vigente durante un año a menos de que yo lo revoque.*

FIRMA

FECHA

Padre/madre o tutor adulto

Si usted quiere hacer alguna pregunta acerca del envenenamiento por plomo, llame a Mishelle Macias, del Departamento de Salud del Estado, al 303-692-2622, o a Keyra Zapién, al Denver Health and Hospitals, al 720-956-2151, para saber sus resultados.



Colorado Department  
of Public Health  
and Environment

Place participant Id label here

## Vasquez Boulevard/I70 Community Health Program Consent Form for Arsenic Testing

As part of the VB/I70 Community Health Program, we are offering free arsenic testing to young children, ages one to six years old, who live within the VB/I-70 Superfund Site. The Health Department recommends that you have your child's urine and hair tested for arsenic if you live at a home with high levels of arsenic in your soil, or if your answers to the short soil risk questionnaire indicate your child may be at increased risk of exposure to arsenic in your yard soil. Exposure to high levels of arsenic has been linked to a number of health risks, including digestive tract problems and skin abnormalities (e.g., discoloration and unusual growths which may become cancerous).

Trained health care workers will collect a hair sample from your child and give you instructions about how to help your child provide a urine specimen. If your child is not able to provide a urine sample at the test site, we will give you instructions for collecting a sample at your home, and tell you how to store the sample until you deliver the sample to a neighborhood collection site. For the hair test, a small piece of hair (about the thickness of a pencil) will be cut from the back of the head at the nape of the neck, where it is least visible.

We will only test the urine and hair samples for arsenic. A health coordinator will send the results of your child's test to you through the mail. It may take about three weeks to receive your child's test results. If we find your child has too much arsenic in their urine or hair, a health coordinator from the state Health Department will contact you. You may be asked to have your child retested or be referred for additional free services, if they are needed and you give your consent. This may include a home investigation from Denver Environmental Health, or removal of arsenic from your yard by the Environmental Protection Agency (EPA).

All information you provide will be kept confidential. Your name, address, your child's name and other personal information will **NOT** be used in any published report or given to any person other than you and your state or local health department, without your written permission.

**AUTHORIZATION FOR ARSENIC TESTING:** *I have read the information above and understand the possible inconveniences of having my child provide a urine and hair sample. I agree to the participation of:*

CHILD'S NAME \_\_\_\_\_ BIRTHDATE \_\_\_\_\_

TEST SITE: \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE (\_\_\_\_) \_\_\_\_\_ - PARENT's NAME (print) \_\_\_\_\_

EMERGENCY CONTACT \_\_\_\_\_ EMERG. PHONE (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

CHILD'S PRIMARY CARE PROVIDER OR CLINIC \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Adult parent or guardian

**AUTHORIZATION TO SHARE INFORMATION WITH OTHER HEALTH AGENCIES:** If your child has a high arsenic level and you qualify for additional free services, other agencies may need to contact you about these services. Information will only be shared with the appropriate agency that is able to provide additional follow-up for you and your family.

*By signing below, I give permission to the Arsenic Exposure Investigation Team (including the State Health Department, Denver Health and Hospitals, Denver Environmental Health, and EPA) to share information about my child's arsenic levels and address. By sharing this information, I understand I am permitting a representative of these agencies to contact me about free follow-up services. This permission will remain in place for one year unless I withdraw it. I understand that participation in this testing program is voluntary, and that if I refuse to sign below I will not lose benefits or medical care to which I am otherwise eligible, and my child may still get free arsenic tests as long as I have signed the "AUTHORIZATION FOR ARSENIC TESTING" in the previous section.*

**SIGNATURE**

**DATE**

Adult parent or guardian

If you have questions about arsenic testing, call Jane Mitchell, at the Colorado Department of Public Health and Environment, at 303-692-2644.



Colorado Department  
of Public Health  
and Environment

Place participant Id label here

### Vasquez Boulevard/I70 Programa Comunitario de Salud Consentimiento para hacer una prueba para detectar arsénico

Como parte del Programa Comunitario de Salud VB/I7, estamos ofreciendo pruebas gratuitas para detectar arsénico en niños pequeños que viven dentro del Sitio del Superfund VB/I-70. El Departamento de Salud le recomienda que se examine la orina y el pelo de su hijo(a) para detectar arsénico si vive en una casa con niveles altos de arsénico en el suelo, o si las respuestas al cuestionario sobre riesgo de arsénico en el suelo indican que su hijo puede tener un riesgo en aumento por exposición al arsénico de su suelo. La exposición a niveles altos de arsénico se ha vinculado con numerosos riesgos a la salud, incluyendo problemas en el tracto digestivo y anomalías en la piel (p.ej., decoloración y protuberancias anormales que pueden convertirse en cancerosas).

Trabajadores capacitados de salubridad tomarán una muestra de cabello de su hijo(a) y le darán instrucciones a usted para que ayude a su hijo a que proporcione una muestra de orina. Si su hijo no puede proporcionar una muestra de orina en el lugar de la prueba, le daremos instrucciones a usted para recolectar la muestra en su casa y le diremos cómo almacenarla hasta que la lleve. Para la prueba del cabello, se le cortará una porción pequeña de cabello (como del grueso de un lápiz) de la parte de atrás de la cabeza, de la nuca, en donde es menos visible.

Vamos a analizar las muestras de orina y de cabello sólo para ver el nivel de arsénico. Un coordinador de salubridad le enviará por correo los resultados de la prueba de su hijo. Usted recibirá los resultados de la prueba de su hijo en alrededor de tres semanas. Si encontramos que su hijo tiene demasiado arsénico en la orina o en el cabello, un coordinador de salubridad del Departamento de Salud del Estado se pondrá en contacto con usted. Se le puede pedir que haga que a su hijo se le haga otra prueba o se canalizará para recibir servicios gratuitos adicionales si se necesitan y si usted otorga su consentimiento. Esto puede incluir una investigación que haga de su casa de la Oficina de Salud Ambiental de Denver, o que la Agencia de Protección Ambiental (EPA) saque el arsénico de su patio.

Toda la información que usted proporcione se mantendrá confidencial. Su nombre, dirección, el nombre de su hijo y otra información de identificación **NO SE USARÁN** en ningún reporte que se publique ni se dará a ninguna persona que no sea usted y su departamento de salud local o estatal, sin su permiso por escrito.

**AUTORIZACIÓN PARA HACER LA PRUEBA DEL ARSÉNICO:** *He leído la información que antecede y entiendo los posibles inconvenientes de hacer que mi hijo proporcione una muestra de orina y de cabello. Estoy de acuerdo en la participación de:*

NOMBRE DEL NIÑO \_\_\_\_\_ FECHA DE NACIMIENTO \_\_\_\_\_

LUGAR DE LA PRUEBA \_\_\_\_\_

DOMICILIO \_\_\_\_\_ CIUDAD \_\_\_\_\_ ZIP \_\_\_\_\_

TELÉFONO ( ) - \_\_\_\_\_ NOMBRE DEL PADRE/MADRE (letra de imprenta): \_\_\_\_\_



CONTACTO DE EMERGENCIA \_\_\_\_\_ TELÉFONO DE EMERGENCIA (\_\_\_\_) \_\_\_\_\_

PROVEEDOR O CLINICA PARA LA ATENCION MEDICA DEL NIÑO : \_\_\_\_\_

FIRMA \_\_\_\_\_

FECHA \_\_\_\_\_

Padre/madre o tutor adulto

**AUTORIZACIÓN PARA COMPARTIR LA INFORMACIÓN CON OTRAS DEPENDENCIAS DE SALUD:** Si su hijo tiene un nivel alto de arsénico y usted califica para recibir servicios gratuitos adicionales, otras agencias pueden necesitar comunicarse con usted en relación con estos servicios. La información se compartirá sólo con la agencia apropiada que pueda proporcionarle un seguimiento a usted y a su familia.

*Al firmar abajo, doy permiso al Arsenic Exposure Investigation Team (incluyendo el Departamento de Salud del Estado, Denver Health and Hospitals, Denver Environmental Health y EPA) para que comparta la información sobre los niveles de arsénico de mi hijo y su dirección. Al compartir esta información, entiendo que estoy permitiendo que un representante de estas agencias se ponga en contacto conmigo en relación con estos servicios gratuitos de seguimiento. Este permiso permanecerá vigente durante un año a menos de que yo lo revoque. Entiendo que la participación en este programa de pruebas es voluntaria, y que si decido no firmar abajo, no perderé los beneficios o la atención médica a los que tengo derecho por otro concepto, y que a mi hijo de le harán las pruebas gratuitas del arsénico siempre que yo haya firmado la "AUTORIZACIÓN PARA HACER LA PRUEBA DEL ARSÉNICO" de la sección anterior.*

FIRMA \_\_\_\_\_

FECHA \_\_\_\_\_

Padre/madre o tutor adulto

Si quiere usted hacer alguna pregunta acerca de las pruebas del arsénico, llame a Leovi Pinedo-Madera, del Departamento de Salud Pública y Medio Ambiente de Colorado, al 303-692-2699.

## **Attachment 4**

### **Protocol for Sample Collection, Numbering, and Shipment**

## **PROTOCOL FOR DATA COLLECTION AND SAMPLE LABELING**

This protocol identifies a method for data collection and sample labeling that minimizes redundant data entry and the potential for error.

***FOR EACH ADULT THAT COMES TO THE CLINIC WITH 1 OR MORE CHILDREN:***

### **STEP 1. COMPLETE CHP FORM I**

- Obtain one set of VBI70 CHP forms (one set is used for each family) and one file folder.
- Assign a unique VBI70 case number to each child to be tested. Transfer the case number from the pre-printed sheet of labels to the appropriate box below each child's name on Form 1. Transfer label from the pre-printed VBI70 CHP label sheet to the outside of the file folder for each child in the family.
- Fill in the data for the family and each child that the family wishes to have tested.

***FOR EACH CHILD:***

### **STEP 2. COMPLETE FORM 2 (one Form 2 for each child)**

- Write the child name on the top of Form 2.
- Place the second label from the sheet of pre-printed labels on the appropriate box of Form 2.
- Collect the required data in Form 2, Part A

Based on the results from Form 2 Part A, recommend to adults what samples should be collected to evaluate arsenic exposure, if any.

- ***If arsenic testing is recommended*** and parent's consent is given for testing, proceed to complete Form 2 Part B. If arsenic testing is not recommended, proceed to Form 3.

### **STEP 3. COMPLETE FORM 3 (one Form 3 for each child)**

Write the child name on the top of Form 3.

Place the third label from the VBI70 CHP label sheet on the appropriate box of Form 3.

Record on the sheet which samples have been recommended and which they agree to. Be sure the appropriate consent form is signed before proceeding with sample collection.

## **STEP 4. COLLECT SAMPLES**

### **Blood**

- Follow the standard procedure to obtain a filter-paper blood sample. Obtain a duplicate sample for about 1 in 20 cases, if blood flow is adequate and if the child is not distressed.
- For each sample collected, obtain one MedTox blood lead requisition form. For each sample, transfer large label from the bottom of the MedTox requisition to the MedTox pediatric lead collection card, and transfer the second smaller label to Form 3. Enter VB id number assigned to the child on the MedTox requisition form (in the field called Physician Provider No. VB\_\_\_\_). Enter patient name, address, DOB, and date tested on the MedTox requisition.
- Record the number of blood samples successfully collected on Form 3.

### **Urine**

- If a sample of urine is to be collected, provide the adult with a sample collection bottle and sample collection instruction sheet. Ask them to assist the child in collecting the sample. It is preferred that sample collection takes place in the clinic, but may occur in the home in some cases.
- For each urine sample collected, transfer the appropriate label from the pre-printed VBI70 CHP label sheet to the sample bottle and place the bottle in a cooler with blue ice.

### **Hair**

- If a sample of hair is to be collected, collect the sample in accord with the standard procedure and attach the sample to the card provided by CTQ. Apply the appropriate label from the pre-printed VBI70 CHP label sheet to the card, place the card in a Ziploc bag, and store the sample until shipment to the lab.

## **Step 5. SEND SAMPLES TO THE LAB**

### **Blood Samples**

Blood lead samples will be transferred daily to DHH. For each sample, collect and submit the following (as a package, to be placed in large Ziploc bag):

- The MedTox requisition

- The carbon copy of Form 1
- The carbon copy of the blood lead consent form
- The blood lead sample

#### Urine Samples

Complete a Chain of Custody (COC) form (provided as Form 4) for all urine samples to be submitted to the laboratory. Place the top copy of the COC in the cooler (chilled with blue ice) with the samples and send to the laboratory. Retain a copy of the COC for use by CDPHE.

#### Hair Samples

Complete a Chain of Custody (COC) form (provided as Form 5) for all hair samples to be submitted to the laboratory. Place the top copy of the COC in a mailing envelope along with the samples and send to the laboratory. Retain a copy of the COC for use by CDPHE.

## **Attachment 5**

### **Protocol for Insertion of PE Samples**

## **PROTOCOL FOR INSERTION OF PE SAMPLES**

This protocol identifies a method for inserting Performance Evaluation (PE) samples into the VBI70 CHP biomonitoring program sample streams. All PE samples should be inserted into the sample streams blind and in random order.

### **BLOOD PE SAMPLES**

Obtain a VBI70 forms kit and a MedTox requisition. Fill in Form 1, the blood consent form, and the MedTox requisition with fictitious information.

Transfer a VBI70 case number to Form 1 and to Form 3. Do not fill in Form 2.

For "Child Name" on Form 3, enter "PE". Indicate which type (nominal concentration) was used to prepare the sample.

Prepare the PE sample by placing a drop of blood from a CDC PE sample on the filter paper. Transfer one label from the MedTox requisition to the PE sample, and place the second MedTox label on Form 3.

### **URINE PE SAMPLES**

Obtain a VBI70 forms kit. Transfer a VBI70 case number to Form 1 and to Form 3.

On Form 1, simply enter "PE" for name. Do not fill in Form 2.

On Form 3, enter "PE" for "Child Name". Indicate which type (nominal concentration) of urine PE sample was used to prepare the sample.

Transfer the PE sample into a regular urine sample bottle. Transfer a urine label from the pre-printed sheet to the sample bottle.

### **HAIR PE SAMPLES**

Obtain a VBI70 forms kit. Transfer a VBI70 case number to Form 1 and to Form 3.

On Form 1, simply enter "PE" for name. Do not fill in Form 2.

On Form 3, enter "PE" for "Child Name". Indicate which type (nominal concentration) of hair PE sample was used to prepare the sample.

Transfer the PE sample onto a regular hair sample card. Transfer a hair label from the pre-printed sheet to the card.

## **Attachment 6**

### **CTQ Internal Quality Control Procedures**



## Intralaboratory and Interlaboratory Quality Control Procedure

### SCOPE

This procedure applies to all analytical methods used in the laboratory.

It describes the rules governing the use of quality control, whether it is achieved through the use of certified reference materials (CRMs), reference materials (RMs), or interlaboratory comparison programs.

### PRINCIPLES

Each series of analyses shall include at least one reference material to ensure the quality of the analyses and subsequently, the quality of the results submitted by the laboratory.

Intralaboratory quality control ensures that the quality of the results submitted by the laboratory is consistent.

Interlaboratory quality control enables the statistical comparison of the results of our methods and those of other laboratories around the world.

### INTRALABORATORY QUALITY CONTROL PROCEDURE

#### 3.1 General Procedure

Appropriate certified reference materials (CRM) and reference materials (RM) are listed in the "Quality Control" section of the analytical method.

Assay series are defined in the "Analytical Protocol" section of the analytical method, or on work sequence sheets related to each apparatus.

#### 3.2 Analysis of Frequency and Number of Concentrations of CRMs and RMs to be Used

##### 3.2.1 Clinical and Metals Sectors

Generally, CRMs and RMs are analyzed as follows:

- ⇒ Analysis of one CRM or RM after establishing the calibration curve.
- ⇒ Analysis of one CRM or RM following every tenth sample and at the end of the series.

If various concentration levels are available, alternate analysis of these concentrations within the series.

### 3.2.2 Environmental Sector

CRM or RM analysis frequency is defined in the analytical method protocol section.

Generally, one or two CRM or RM concentrations are used (depending on the method used).

### 3.3 Introduction of a New CRM or RM

Applies to all CRMs and RMs, whether the target value is temporary, definitive or not as yet established (when a new CRM or RM is introduced by overlapping it with the existing CRM or RM).

Procedure for the Introduction of a new CRM or RM:

- 1) In LIMS, enter the new CRM or RM via the "Static Cqs Sample Table" menu (Section 2.6 of the StarLIMS user manual).
- 2) In LIMS, modify the method description via the "Static Method Table" menu (Section 2.1 of the StarLIMS user manual).
- 3) In the analytical method, edit the "Quality Control" section to reflect the new CRM or RM.
- 4) In the electronic Inventory, update the reference materials (see PL-036, Use of electronic inventory systems)
- 5) If applicable, modify the quality control values in all analytical apparatus software.

### 3.4 Compilation of CRM or RM Results

#### 3.4.1 Entering CRM or RM Results in LIMS

Results are entered in LIMS via the "Results Entry" menu (Section 5 of the StarLIMS user manual) or the "Import" menu (Section 6)

Note: All CRM and RM results must be included in LIMS, even in the case of rejected series where CRM or RM results violate the rules outlined in 3.5.6.

#### 3.4.2 Comments Associated With CRM or RM Results

Each time a CRM or an RM result is entered into LIMS, a comment may be added for background purposes. These comments may, for example, allow a user to quickly

retrace the cause of a violation described in section 4.3. The comments may also include a pertinent explanation with regard to the analyzed series, or to the CRM or the RM. Each comment must be initialed by the person who prepared it. Each commentary associated with a red flag must be initialed by the chemist who conducted the analysis.

A comment must be written in each of the following situations:

- ⇒ Violation of a mle (red flag), whether results were submitted or not.
- ⇒ Changing one element of the method or changing an instrumental component.  
For example:
  - new CRM or RM batch, calibration standard, chemical, etc.
  - new stock solution, working solution, or internal standard solution
  - new preparation of a laboratory product (diazomethane, buffer solution, acid, base, etc.)
  - new instrumental component (column, insert, lamp, septum, etc.)
  - any changes to analytical protocol
- ⇒ Any other pertinent situation.

Comments associated with results are entered in LIMS via the "Results Entry" menu (section 5 of the StarLIMS user manual) or the "Import" menu (section 6).

### 3.5 Quality Control Chart and Table

Each CRM or RM has its own quality control chart and table.

#### 3.5.1 Description of Quality Control Table

The table contains CRM and RM results that are used to create the chart, as well as several other pieces of pertinent information:

- ⇒ name of the compound or element and its code
- ⇒ name of the CRM or RM
- ⇒ analytical apparatus
- ⇒ date of analysis
- ⇒ results of CRM or RM measurements and units
- ⇒ ?trend point value?
- ⇒ relevant comments (see section 3.4.2)
- ⇒ relative (%) and absolute standard deviation for all CRM or RM results obtained.

#### 3.5.2 Description of the Chart

The chart schematically lists the CRM or RM results that have been imported from LIMS.

The chart appears in the form of a graph where the x-axis represents the date of the CRM or RM analysis and the y-axis represents the value of the results of the CRM or RM analysis. The domain of the y-axis is  $\pm 5$  standard deviations ( $\pm 5$  sigma). All CRM or RM results which are not within  $\pm 5$  standard deviations ( $\pm 5$  sigma) do not appear on the chart, but may be found in the compiled results table that is attached to the chart. The x-axis allows for a maximum of 50 results to be recorded.

CRM or RM results are represented by black triangles which are not connected to each other. If many results are recorded on the same date, these results are superimposed. All results are included in the chart, even results from rejected series.

The centre line represents the target value of the CRM or RM. This value remains constant.

Bias, warning and action lines are drawn on either side of the centre line at  $\pm 1$ ,  $\pm 2$  and  $\pm 3$  standard deviations respectively. These lines remain constant.

The following information is included in the chart:

- ⇒ name of the compound or element and its code
- ⇒ name of the CRM or the RM
- ⇒ analytical apparatus
- ⇒ target value and units
- ⇒ the value of 1 sigma (standard deviation)
- ⇒ domain of the x-axis (from...to...)

For each CRM's or RM's result, a trend point is calculated as follows:

$$\text{New trend point value} = (0.8 \times \text{value of previous result}) + (0.2 \times \text{value of new result})$$

Trend points do not appear on the chart. However, they are linked by the trend line, the purpose of which is to integrate data in order to show constancy or movement in the average.

Trend points are not calculated if the CRM's or RM's result is greater than  $\pm 3.5$  standard deviations (considered an aberration), so as not to needlessly disrupt the trend line. In this case, the value of the previous trend point is duplicated.

The starting point of the trend line may be:

- ⇒ The CRM or RM target value if it is a new diagram or if there was a change in the method, which would result in a new trend line.
- ⇒ The last recorded trend point on the last control diagram.

### 3.5.3 Interpretation and Procedures

Each violation of the following rules appears in LIMS in the form of warning codes within the quality control table.

All rule violations must be the subject of a comment, as described in section 3.4.2.

All procedures undertaken to resolve an issue stemming from the violation of a mle must be recorded. In simple cases, a comment as described in section 3.4.2 is sufficient. When the method must be modified, form F-10-09 (Method, procedure or protocol development summary) must be completed as well.

### 3.5.4 Code Green

No violation of the rules. Results may be submitted without further verification.

### 3.5.5 Code Yellow

The series is not rejected as a result of the rule violation. However, particular care must be used to solve the problem, if applicable (checking that all steps of the method are under control).

- 1-"Trend": The trend line crosses the bias line ( $\pm 1$  standard deviation).
- 2-"2 SIG": A CRM or an RM result is past the warning line ( $\pm 2$  standard deviations).

### 3.5.6 Code Red

The series is usually rejected as a result of the mle violation. A solution must be sought and implemented, and the analysis must be repeated.

All series containing a code red flag that are accepted must include a comment and a justification as described in section 3.4.2.

- 1-"3 SIG": A CRM or an RM result is past the action line ( $\pm 3$  standard deviations)

- 2-"2 OOS": Two consecutive CRM or RM results are past the same warning line (either +2 standard deviations or -2 standard deviations).
- 3-"4 SIG": Two consecutive CRM or RM results are separated by a total of 4 standard deviations, within a domain of +/- 3 standard deviations (for example, one result is between + 2 and +3 standard deviations and the other is between -2 and -3 standard deviations).
- 4-"4 OOS" Four consecutive CRM or RM results are past the same bias line (either +1 standard deviation or -1 standard deviation).
- 5-"TARGET" Ten consecutive CRM or RM results are on the same side of the target value.

SIG: sigma

OOS: out of specification

### 3.6 Archiving Completed CRM or RM Charts and Data

Use the following procedure to archive completed CRMs or RMs:

1. In LIMS, follow the archiving procedure in the "Static Cqs Sample Table" menu (section 2.6 of the StarLIMS user manual)
2. In the analytical method, edit the "Quality Control" section to reflect the new CRM or RM.
3. In the electronic inventory, update the reference materials (see PL-036, Use of electronic inventory systems).

## 4. PARTICIPATION IN EXTERNAL QUALITY ASSESSMENT PROGRAMS

### 4.1 List of Programs in which the Laboratory Participates

#### 4.1.1 Clinical

Program	Area of Expertise
College of American Pathologists: Serum Alcohol	Acetone, ethanol, isopropanol, methanol
College of American Pathologists: Toxicology	General toxicology, serum/urine
College of American Pathologists: Forensic Urine Drug Testing	Amphetamines, cannabinoids, cocaine, phencyclidine, opiates
Société Québécoise de <i>biochimie clinique</i> : SQBC [Quebec society of clinical biology]	Acetaminophen, diphenylhydantoin, phenobarbital
American Association of Bioanalysts: TDM	Valproic acid, carbamazepine, diphenylhydantoin, ethosuximide,

	phenobarbital, primidone
German Society of Occ. Medicine and Env. Medicine	Urinary cotinine

#### 4.1.2 Environmental

Program	Area of Expertise
FIOH Quality Assurance Program for organic solvent metabolites, Finland	Phenol, trichloroacetic acid, 2,5-hexanedione, muconic acid in urine
German Society of Occ. Medicine and Env. Medicine	Hippuric acid, pentachlorophenol, mandelic acid and phenylglyoxylic acid in urine. Congeneric PCBs in plasma and pp'-DDE, pp'-DDT, hexachlorobenzene, B-BHC and lindane ( $\gamma$ -HCH).
QUASIMEME, United Kingdom	PCBs and organochlorines in tissues
AMAP Ring Text for PCBs and OCs	Congeneric PCBs and organochlorine-based pesticides in plasma

#### 4.1.3 Metallic

Program	Area of Expertise
Blood lead laboratory reference system (BLLRS), CDC Atlanta	Pb in blood
<u>Centre de toxicologie du Québec</u> Interlaboratory Comparison Program	Al (se), As (ur), Cd (bl), Cd (ur), Cr (ur), Cu (se), Cu (ur), F (ur), Hg (bl), Hg (ur), Pb (bl), Pb (ur) Se (se), Se (ur), Zn (se)
<u>Centre de toxicologie du Québec</u> ICP-MS Comparison Program	Al, Be, Bi, Cd, Co, Cu, Cr, Hg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Te, Ti, Tl, V, W, Zn
Interlaboratory mercury comparisons, Health Canada, Ottawa	Hg in hair
State of New York Department of Health	Pb in blood, ZPP, multielement screen serum
Wisconsin State Laboratory of Hygiene	Pb in blood, ZPP
Worldwide Interlaboratory Aluminum Quality Control, France	Al in water and serum
German Society of Occ. Medicine and Env. Medicine	Hg and Mn in blood, Cr, Cu, Mn, Se and Zn in semm, As, Be, Hg, Mn, Tl and (As speciation) urine

#### 4.2 Procedure

Materials provided by various programs are processed at the same time as routine analyses. Results are recorded on answer sheets and mailed or faxed to the agency responsible for managing the program, except for tests conducted through the PCI and the ICP-MS programs.

Results are compared with our own upon reception of statistics compiled by the managing agency. When results do not fall within established standards, the method is reevaluated and corrected if necessary under the supervision of the chemist responsible for the analysis. Answer sheets and documents provided by the managing agency are kept in each laboratory.

For programs managed by our laboratory (PCI, ICP-MS and AMAP Ring Test for PCBs and OCs), results are recorded on an answer sheet and given to the person responsible for data entry. These programs (PCI, ICP-MS and AMAP Ring Test) all have separate result reports.

## 5. REFERENCES

(1) Quality Assurance of Chemical Measurements. Lewis Publishers, John Keenan-Taylor, 1987; 328 p.

(2) Nadkarni, R. A., The Quest for Quality in the Laboratory, Anal Chem, 1991; 63(13): 675-682.

(3) Westgard, J. O., Multirule and "Westgard Rules": What Are They? <http://www.westgard.com>, 2001.